# **APPENDICES**

There are no pages A1-A13

#### APPENDIX 1 **Computer Programs**

```
#!/usr/leo/bin/perl
          if (scalar @ARGV <4) { die "Need Pool, Seq, #False positives, #False negatives\n"; }
  10
          $FalsePos=$ARGV[2];
          $FalseNeg=$ARGV[3];
          open(POOL,$ARGV[0]);
          print "Using pool $ARGV[0]\n";
          $pools=0;
  15
          while(<POOL>)
                 last if (/TotCost/);
                 chop $_;
_
□
□ 20
                 @Probes=split(/[: ]/,$_);
                 shift @Probes;
                shift @Probes;
                 shift @Probes;
                 if (scalar @Probes > 0)
  25
                        @{$Pool[$pools]}=@Probes;
                        foreach $probe (@Probes)
```

\$pools++;

\$PoolInd{\$probe}=\$pools;

**BUILD FALSE** 

5

30

}

\$Found=0;

```
undef(%Mers);
          undef(@Solutions);
          undef(%On);
          foreach $i(0..length($Seq)-10)
   5
          {
                 $fprobe=substr($Seq,$i,5);
                 $lprobe=substr($Seq,$i+5,5);
                 $pool=$PoolInd{$lprobe};
                 $On{$fprobe}{$pool}=1;
  10
          foreach $prb (keys %On)
15 mm m 15
                 foreach $pool (keys %{$On{$prb}})
                 {
                        print "True Signal: fp=$prb pool=$pool\n";
                        push @Signals, new_signal($prb,$pool);
                 }
Ξ
$NumOn=scalar @Signals;
  20
          @char = qw( A C G T );
          foreach $1(@char) {
           foreach $2(@char) {
           foreach $3(@char) {
          foreach $4(@char) {
  25
           foreach $5(@char) {
                 push @Probes, $1.$2.$3.$4.$5;
          }}}}
           foreach $i (1..$FalsePos)
   30
                  $pool = int(rand($pools));
                  fixed = Probes[rand(1024)];
                  \Omega_{som}
                  print "False positive Signal: fp=$fixed pool=$pool\n";
           }
   35
           foreach $i (0..$FalseNeg-1)
                  $tmpSignal=$Signals[$i];
                  \ randPos = i + int(\NumOn);
   40
                  $Signal=$Signals[$randPos];
                  $Signals[$i]=$Signal;
                  $Signals[$randPos]=$tmpSignal;
```

```
On{Signal->[0]}{Signal->[1]}=0;
                   print "False negative: fp=$Signal->[0] pool=$Signal->[1]\n";
                   $NumOn--;
    5
           foreach $prb (keys %On)
                  foreach $pool (keys %{$On{$prb}})
                          if (SOn{prb}{prol}=1)
   10
                                 foreach $probeInPool (@{$Pool[$pool]})
The trail that the was then the trail that
                                         $Mers{$prb.$probeInPooi}=1;
   15
                          }
                   }
C)
- 20
C)
           print STDERR "10mers:", scalar (keys %Mers),"\n";
           print "10mers:", scalar (keys %Mers),"\n";
           $overlap=2;
           foreach $mer (keys %Mers)
C
                  foreach $0 (1..$overlap)
                          $Prefix[$0]{substr($mer,0,length($mer)-$overlap)}.=
   25
                                 substr($mer,length($mer)-$overlap,$o)." ";
                          $Postfix[$0]{substr($mer,$overlap,length($mer)-$overlap)}.=
                                 substr($mer,$0-1,$overlap+1-$0)." ";
                   }
   30
           undef(%Pre);
           undef(%Post);
           foreach $mer (keys %Mers)
   35
                  $Pre{substr($mer,0,length($mer)-1)}.=substr($mer,length($mer)-1,1);
                  $Post{substr($mer,1,length($mer)-1)}.=substr($mer,0,1);
           }
           undef(%Mers);
           foreach $submer (keys %Post)
   40
           {
                  @chars=split(//,$Pre{$submer});
                  @Chars=split(//,$Post{$submer});
                  foreach $ch (@chars)
```

```
{
                          foreach $Ch (@Chars)
                                  $Mers{$Ch.$submer.$ch}=1;
     5
            foreach $0 (1..$overlap)
                  foreach $submer (keys %{$Postfix[$o]})
    10
US4756US .UIUBUT
                          @chars=split(//,$Prefix[$o]{$submer});
                          @Chars=split(//,$Postfix[$0]{$submer});
                          foreach $ch (@chars)
   15
                                 foreach $Ch (@Chars)
                                        Mers{Ch.submer.sch}=1;
   20
                          }
           foreach $i (0..length($Seq)-11)
   25
                  mer = substr(Seq,Si,11);
                  if (!$Mers{$mer})
                         print STDERR $mer, " not found!\n";
                         exit(1);
   30
                  }
           }
          print STDERR "11mers:", scalar (keys %Mers),"\n";
          print "11mers:", scalar (keys %Mers),"\n";
  35
          foreach $lenMer (12..length($Seq))
                 undef(%Prefix);
                 undef(%Postfix);
                 foreach $mer (keys %Mers)
  40
                        $Prefix {substr($mer,0,length($mer)-1)}.=substr($mer,length($mer)-1,1);
                        $Postfix{substr($mer,1,length($mer)-1)}.=substr($mer,0,1);
                 }
```

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```
undef(%Mers);
                 foreach $submer (keys %Postfix)
                         @chars=split(//,$Prefix{$submer});
   5
                         @Chars=split(//,$Postfix{$submer});
                         foreach $ch (@chars)
                                foreach $Ch (@Chars)
  10
                                       $Mers{$Ch.$submer.$ch}=1;
6444115
565
                 print STDERR $lenMer,"mers:", scalar (keys %Mers),"\n";
                 print $lenMer,"mers:", scalar (keys %Mers),"\n";
                 if ((\frac{1}{1000}) = 0) && (scalar (keys %Mers) > 4000))
                        print STDERR "Cleaning...";
                         $Cleaned=0;
20
                        foreach $seq (keys %Mers)
undef(%testOn);
                               foreach $i(0..length($seq)-10)
  25
                                       $fprobe=substr($seq,$i,5);
                                       $pool=$PoolInd{substr($seq,$i+5,5)};
                                       $testOn{$fprobe}{$pool}=1; #To see if all are fully represented
                               $NumtestOn=0;
                               foreach $prb (keys %testOn) { $NumtestOn += scalar (keys
  30
          %{$testOn{$prb}}); }
                               if ($NumtestOn<($lenMer-15))
                                       $Cleaned++;
  35
                                       delete $Mers{$seq};
                               }
                        print STDERR "$Cleaned cleaned out.\n";
                 }
  40
          print STDERR "Checking all ",scalar (keys %Mers), " solutions for full dot-representation...";
          print OUT "#Growths: ", scalar (keys %Mers)," ";
```

```
NEXT:foreach $seq (keys %Mers)
                 undef(%testOn);
                 foreach $i(0..length($seq)-10)
   5
                        $fprobe=substr($seq,$i,5);
                        $pool=$PoolInd{substr($seq,$i+5,5)};
                        $testOn{$fprobe}{$pool}=1; #To see if all are fully represented
                 $NumtestOn=0;
  10
                 foreach $prb (keys %testOn) { $NumtestOn += scalar (keys %{$testOn{$prb}}); }
if ($seq eq $Seq)
                        $Found=1;
                        $seq .= " True solution ";
                 if ($NumtestOn>=$NumOn)
push @Solutions, $seq;
                        print "$seq DotsOn=$NumtestOn\n\n";
SS
          print STDERR "done.\n", scalar @Solutions, " consistent solutions found";
          if ($Found)
  25
                 print STDERR " including the true one.";
          else {
                 print STDERR " - TRUE not FOUND!!";
  30
          print "Solutions: ",scalar @Solutions," ";
          sub new_signal
                 my ($fp,$pool)=@_;
  35
                 my @Signal = (fp,pool);
                 return \@Signal;
          }
```

#### **BuildMMult**

#!/usr/leo/bin/perl

```
5
          if (scalar @ARGV <4) { die "Need Pool, Seq, #False positives, #False negatives\n"; }
          $FalsePos=$ARGV[2];
          $FalseNeg=$ARGV[3];
          open(POOL,$ARGV[0]);
          print "Using pool $ARGV[0]\n";
  10
          $pools=0;
15 4 7 15 CH
          while(<POOL>)
                 last if (/TotCost/);
                 chop $_;
                 @Probes=split(/[: ]/,$_);
                 shift @Probes;
                 shift @Probes;
<u>ا</u>
ان 20
                 shift @Probes;
                 if (scalar @Probes > 0)
@{$Pool[$pools]}=@Probes;
                        foreach $probe (@Probes)
  25
                               $PoolInd{$probe}=$pools;
                        $pools++;
                 }
          }
  30
          print "Using sequence $ARGV[1]\n";
          open(SEQ,$ARGV[1]);
          $Seq="";
          while (<SEQ>)
  35
          {
                 chop $_;
                 Seq = uc();
          }
  40
          $Found=0;
          undef(%Mers);
          undef(@Solutions);
          undef(%On);
```

```
foreach $i(0..length($Seq)-10)
                  $fprobe=substr($Seq,$i,5);
                  $lprobe=substr($Seq,$i+5,5);
    5
                  $pool=$PoolInd{$lprobe};
                  $On{$fprobe}{$pool}=1;
           foreach $prb (keys %On)
   10
                  foreach $pool (keys %{$On{$prb}})
The first first first first first first first
                         print "True Signal: fp=$prb pool=$pool\n";
                         push @Signals, new_signal($prb,$pool);
                  }
   15
          $NumOn=scalar @Signals;
          @char = qw( A C G T );
          foreach $1(@char) {
20
          foreach $2(@char) {
          foreach $3(@char) {
          foreach $4(@char) {
          foreach $5(@char) {
                 push @Probes, $1.$2.$3.$4.$5;
  25
          }}}}
          foreach $i (1..$FalsePos)
                 $pool = int(rand($pools));
                 fixed = Probes[rand(1024)];
  30
                 \Omega_{\text{spool}}=1;
                 print "False positive Signal: fp=$fixed pool=$pool\n";
          }
          foreach $i (0..$FalseNeg-1)
  35
                 $tmpSignal=$Signals[$i];
                $Signal=$Signals[$randPos];
                $Signals[$i]=$Signal;
 40
                $Signals[$randPos]=$tmpSignal;
                $On{$Signal->[0]}{$Signal->[1]}=0;
                print "False negative: fp=$Signal->[0] pool=$Signal->[1]\n";
                $NumOn--;
```

```
foreach $prb (keys %On)
                   foreach $pool (keys %{$On{$prb}})
     5
                          if ($On{$prb}{$pool}==1)
                                  foreach $probeInPool (@{$Pool[$pool]})
   10
                                         $Mers{$prb.$probeInPool}=1;
The first that they are then they first
                          }
           print STDERR "10mers:", scalar (keys %Mers),"\n";
   15
           print "10mers:", scalar (keys %Mers),"\n";
           #$overlap=2;
           #foreach $mer (keys %Mers)
#{
   20
           #
                  foreach $0 (1..$overlap)
           #
           #
                          $Prefix[$0]{substr($mer,0,length($mer)-$overlap)}.=
           #
                                 substr($mer,length($mer)-$overlap,$0)." ";
                         $Postfix[$0]{substr($mer,$overlap,length($mer)-$overlap)}.=
           #
  25
           #
                                 substr($mer,$0-1,$overlap+1-$0)." ";
           #
                  }
           #}
           undef(%Pre);
           undef(%Post);
  30
           foreach $mer (keys %Mers)
           {
                  $Pre{substr($mer,0,length($mer)-1)}.=substr($mer,length($mer)-1,1);
                  $Post{substr($mer,1,length($mer)-1)}.=substr($mer,0,1);
  35
          undef(%Mers);
          foreach $submer (keys %Post)
          {
                 @chars=split(//,$Pre{$submer});
                 @Chars=split(//,$Post{$submer});
  40
                 foreach $ch (@chars)
                         foreach $Ch (@Chars)
```

```
$Mers{$Ch.$submer.$ch}=1;
                           }
                   }
     5
            #foreach $0 (1..$overlap)
            #
                   foreach $submer (keys %{$Postfix[$0]})
            #
                   { ,
            #
                           @chars=split(//,$Prefix[$0]{$submer});
   10
            #
                           @Chars=split(//,$Postfix[$0]{$submer});
            #
                           foreach $ch (@chars)
Sale Will Said thin Mr. Man Win Strate Strate
            #
            #
                                  foreach $Ch (@Chars)
            #
   15
            #
                                         $Mers{$Ch.$submer.$ch}=1;
            #
            #
                          }
            #
foreach $i (0..length($Seq)-11)
   20
                   mer = substr(Seq,Si,11);
                   if (!$Mers{$mer})
   25
                          print STDERR $mer, " not found!\n";
                          exit(1);
                   }
           }
   30
           print STDERR "11mers:", scalar (keys %Mers),"\n";
           print "11mers:", scalar (keys %Mers),"\n";
           foreach $lenMer (12..length($Seq))
                  undef(%Prefix);
   35
                  undef(%Postfix);
                  foreach $mer (keys %Mers)
                          $Prefix{substr($mer,0,length($mer)-1)}.=substr($mer,length($mer)-1,1);
                          $Postfix{substr($mer,1,length($mer)-1)}.=substr($mer,0,1);
  40
                  undef(%Mers);
                  foreach $submer (keys %Postfix)
                  {
```

```
@chars=split(//,$Prefix{$submer});
                                                                                                                                              @Chars=split(//,$Postfix{$submer});
                                                                                                                                              foreach $ch (@chars)
                        5
                                                                                                                                                                                    foreach $Ch (@Chars)
                                                                                                                                                                                                                           $Mers{$Ch.$submer.$ch}=1;
                                                                                                                                             }
                  10
                                                                                                     print STDERR $lenMer,"mers:", scalar (keys %Mers),"\n";
The first state of the second 
                                                                                                      print $lenMer,"mers:", scalar (keys %Mers),"\n";
                                                                                                      if ((\frac{1}{100} (\frac{1}{100} 
                15
                                                                                                                                            print STDERR "Cleaning...";
                                                                                                                                            $Cleaned=0;
                                                                                                                                            foreach $seq (keys %Mers)
undef(%testOn);
                20
                                                                                                                                                                                  foreach $i(0..length($seq)-10)
                                                                                                                                                                                                                         $fprobe=substr($seq,$i,5);
$pool=$PoolInd{substr($seq,$i+5,5)};
                                                                                                                                                                                                                         $testOn{$fprobe}{$pool}=1; #To see if all are fully represented
               25
                                                                                                                                                                                 $NumtestOn=0;
                                                                                                                                                                                 foreach $prb (keys %testOn) { $NumtestOn += scalar (keys
                                                            %{$testOn{$prb}}); }
                                                                                                                                                                                 if ($NumtestOn<($lenMer-15))
               30
                                                                                                                                                                                                                        $Cleaned++;
                                                                                                                                                                                                                        delete $Mers{$seq};
               35
                                                                                                                                        print STDERR "$Cleaned cleaned out.\n";
                                                                                                   }
                                                          print STDERR "Checking all ",scalar (keys %Mers), " solutions for full dot-representation...";
                                                          print OUT "#Growths: ", scalar (keys %Mers)," ";
               40
                                                         NEXT: foreach $seq (keys %Mers)
                                                                                                 undef(%testOn);
```

```
foreach $i(0..length($seq)-10)
                         $fprobe=substr($seq,$i,5);
                         $pool=$PoolInd{substr($seq,$i+5,5)};
    5
                         $testOn{$fprobe} {$pool}=1; #To see if all are fully represented
                  $NumtestOn=0;
                  foreach $prb (keys %testOn) { $NumtestOn += scalar (keys %{$testOn{$prb}}); }
                  if ($seq eq $Seq)
   10
                         $Found=1;
H 15 15
                         $seq .= " True solution ";
                  if ($NumtestOn>=$NumOn)
                         push @Solutions, $seq;
                         print "$seq DotsOn=$NumtestOn\n\n";
print STDERR "done.\n", scalar @Solutions, " consistent solutions found";
   20
if ($Found)
                 print STDERR " including the true one.";
25
          else {
                 print STDERR " - TRUE not FOUND!!";
          print "Solutions: ",scalar @Solutions," ";
  30
          sub new signal
                 my ($fp,$pool)=@_;
                 my @Signal = (fp,pool);
                 return \@Signal;
  35
          }
```

10

# APPENDIX 2 Experimental Target Sequence r300

5	GTAGGGGTAG	ACATCGCGTA	AAAGGGGCGT	ACCCAGGACC	CCCCTTGGCT	CAATAAGTAG
	CGCTGGGGTG	CTACTACGGG	TCTCGACACG	CATTCAACTA	AAAGCTTCCA	TTCGCACGGG
	CTTATTTAAC	GAAGGTCGCG	ATAAGGTGCC	GAATAGGCTG	CAGAGCGGCA	GCCTGTCCAG
	TGAATGCTGT	GAGGCCTCCA	GCTGACTCAT	GAGAGAAGCC	CAGTATTCAA	ACTACGATTC
	CACTCGACAA	TTTAGGATGT	CTTCCCGAAA	GCTATCGGGT	AGAATATCAG	ATTCGTTTAA

# APPENDIX 3 D16 and DN16 Pools of Probes

5	D16					
J	Group 0:64:					
10	GATTT AAGAT AGAAC TTGCT	CAGCT CAAGC TCAAA GTAAG	GAAAA TAACG ACTAT GGTAC	TGGTT GCCTC TCAGT TTAGA	AAAGT TGCAA GGGAA TAGTC	CGCTC CAATG TTCTA CCACA
C 4 15	CTCTT AACAG TATGT TCTCC	ATGAA TGGGG GGACT GCGGG	TCTGA GCACC AGCGA GTCGT	ACCGC GTGGC TGATG CGCCG	TACAC GGCTG GATCA ATTGG	CCTTA GTCCA TCCCG GTATC
	AGTTA GTTTG CTGCG	ATACT CGTAG CGATA	CTTCC TTTAT ACGTG	CCCAG AACCC AGGCA	GCCAT CCGAC	TGTTC CAGGA
= 20 == 	Group 1:64:					
こ す こ 25	GTAAA GGATG GAGGA	TCAGG CAACG TAATC	ACTCC AATGG CAAGT	ATTAC TATCG TGCTA	CCTGT CTCAA ACCAA	GCCCG TGCCG TAGAA
	GGCTC ATCTG CCAGA CCGCA	TACGC TTTAG ACTTA AAACA	CGGGG CATAC GCACA ATGTC	TTATA CCCCT GCTTG TGGGT	CTCGG GACAG TCCAC TCTTC	CTACC AGAGA CTGGC ATAGT
30	TGACC AGGTA TGTGA GTATT	TTGAT AAGCC GGTGC ATCCT	AGCAT CGAAT CAGTT GCGAT	GTTCA CGGAC GCGGC CTTTT	CGTCA TCGTG CACTA	ACATT GGCGT GGTCT
35	Group 2:64:					
40	TAGGG TAATT TGCTG	GCGTC CTGAC GTCCG	GTTTC GGGCG TACCC	AGATT CCAAT AGCAG	TGTGT CTAGT GTTCT	TTCGA ATTCC ACTCG
40	TTAAG CAGAG CCGTT ATGGG	CCCGG TCCCT TCTGC AAGTG	CGCCT CCTAA CGATG CATGT	GATAG GGAGA AGCGC GCATT	TACAA CCACC CGGTA CAGTC	TCATA AGACC ACAGG CTTTG
45	TTGTT ACCAT GAGGC GGGAT	TGAAC CAACA AAACT TTGCA	GAAGG AATAC CTCTC ACGGA	GGCAA GACGT GCTCA AGTAA	GACTA ATAAA CGTGC	ACGAC GTAGC ATCTA

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Group	3	: 6	4
Z	AC(	36	·т

	ACGGT	CGGCA	ATACG	CCTTC	AACGC	CGCGC
5	CGACG	CGGGT	GTGAA	AGCAA	CTAGA	TCGTA
	GAACT	TGTGC	GCCCC	TTCTT	TGCCT	TCAAG
	CCTGG	TAAGG	TCCTC	ATCAC	CACTT	ACGAG
	GTTGT	TTAGC	CACAG	GCATA	AAATC	CTAAT
	GCAGC	GAGAC	GGTAG	TGACA	AATAT	TATTC
10	TTGCG	GCTAT	TGGAT	GATGG	ATGTT	TACCA
	ATTTG	TCTCG	CTTTA	ATTGA	CTCCC	AGGCC
e.	GTCGG	GGTTA	AAGCG	ACTCA	TCCGT	AGCTG
C) .rs	CATCC	AGAGG	GAGTG	GTGTC	AAAA	CCCAA
14.) P*	CGATT	CCGCT	TAGGA	TGGTG		
15 15						
۵	Group 4:64:					
Ē)						
M	TAAAT	CGTAT	AAAAG	CAAGA	ACGAT	GAACA
ຼີ 20	TTCGC	AACGG	TATGA	ATCAA	TCCAA	CGCGT
C)	CAGAA	AACCT	GCGCA	GAGGG	AATGT	ATGCC
	CTGGT	GGGCT	GAGTT	AAGTA	CAGCC	TGTAC
	CAATC	AGCTC	GCAAC	ATGGA	TAGCA	TCTCT
ក្ ក្នា 25	GCCGT	CTACG	CTTAC GACAC	GTTAG	CCTGC	CGTCG
	TTCCG GGATA	TCGGG GTCCT	ATAAC	ACATG CCATT	GGCGA CACTG	AGACT GATTC
	TACTA	CCCCA	ATTTC	GGGAG	CCGAG	CATCT
	TGAGC	GGTCA	GTAGG	AGTGG	TCACC	CGCCC
	GCTTT	TTATT	TGTTG	TTGTG	TCACC	CGCCC
30	00111	11111	10110	11010		
50						
	Group 5:64:					
	GGGCC	TCTAG	ACCGA	GAAAT	CATAG	CCTGA
35	GTTAC	AACAA	TGCGC	CGGAA	AACTT	AAAAT
	ATAAG	CGCTT	GCTCT	ACTGT	TCCAT	ATGAT
	CTTCG	CTGGG	AATCG	CAGCA	TTCTG	GCTAA
	TGGTA	CCCCG	CTATA	AGCGG	GAACG	CACGG
40	TGTAT	GCCGC	TACCT	TCGCC	TAGAC	GTGTT
40	AGATA	GACCC	TAGGT	AAGGC	ACACC	TTATC
	TCATG	CCAAC	CTCAC	GCGTG	GTACA	GACGA
	CCGTC	ATTTT	GATTA	CATTC	CTGCT	CGAGC
	TGACT	AGTTC	GGAGT	CCAGT	AGGAC	GTCAG
45	GGTGG	ACGCG	ATCCC	TTTGA		
43						

	Group 6:64:					
5	AAGGG TCGTC CGGCG CTCGC TTGAA ATTGT TATTA	CATAT CAGAC AGGAG GCGCG ATAGA TATGC CATGG	GCCTA CCAAG AACGA TACCG TTAGG AACTC CGTGT	GAAAC CGCAA GGCCC AGCAC TAAAG ACCAG GTCAT	TGATT CAATA CTACT TGTAA ACTAA TAGCT AGTTT	ACAGC CTCTG ACGCC TGCGT TTTAC AGATG AAAAT
10	CCGGT CGAAC GACTT CCTTG	TCGAT GCATC GATCC CTTTC	ATTCG GCTGA GTTGG CTGTT	GGACA GTGAG TTCCA TGGGC	GGGTA CCTCA CGGGA	GAGGT TCACT ACCCT
15 11	Group 7:64:					
20 LT	TCCGG GTCTC CGTTC AACTG ACCCC GATAC CCGTG ATGTA ATCAT CGGAT GCGCT	CGGGC CAATT TGGCA ACTTT ATAGG CTCGT GTATA TCTAC TTGCC TTATG TTGGA	AAAAC AGTGT AGTAG ACGGC CTTAG CATTA GATTG CAGCG ATTCT TATCT CCAGG	GGAAG GCAGT TTAAT CTAAC TACAG TGAGA GGTGA TCACA GTACC AGCCA CCTCC	GACAA GGCCG CGACT CGTAA TCGGT AGACG TAGTT TAAGC TCCTA ACATA	TGCAC GCGAA CTTCA GACCT CACGC GTGGG GGGTC AAGGA TGTTT TCGAG
30	Group 8:64:					
35 40	TTTTC AGTCC AAAGA CTACA GTCTT CACCC CCGAA AGGTG	GCCCA TGTCG CGTTA TATAA ATTAT AACCG GTTCG TCCTT	ATATC TCACG CACAT GCGAC TAATG AATAG ACGCT ATCGT	GGAAA ACCAC CCTCT GGGGG AGGAT CGGCT CCGCG TTCAA	GTTGA CGATC GATGC CTCGA AATCA GAGAG GGTTT ACTTG	CAGTA TGAAT CTAAG GGCGC TCTGT GTGTA AAATT ATGGC
	TCGGA GCATG CCAGC	CCCTA AGAAG ACAAA	TAGCC CGCAG GCCGG	TGCCA CAAGG GTACT	TTGGG TGGAC	TATTT GAGCT

45

	Group 9:64:					
5	TAGTA ATACA CATCG CCCTT ATAAT	TATCC CACAA TTCGT GCCGA TAAAC	GTAAC AGGAA GCTTA AATTT CTGTA	ACGTT ATAGC AACCA AGTCT CGACC	TTTAA TTACT CGCTG GCGCC TACGG	CTTGT CACCT TAGAG TCGCA GGCGG
10	CCGGC ATCTC TTGGC	GATAT AGGGC ATGCG	CAGGT GAATG ACTGA	CCAAA TGTCA TCATT	TGGTC GTGAT GAAGT	TTCCC GGCCT GGGTT
15	GCCAC AAAGG GCTAG	ACTAC CATGA GGACG	TCTGG TTTTG TGAGG	ACCCG GACTC GTGGA	CGTAC GTTGC	CTCAG TGCAT
4D	Group 10:64:	:				
다 다 다 20	CCACG CCGTA ATTCA	GCAGA TGATA CGAGG GCTGT	AACGT GCCTG TGGGA TAACT	GAGAT TCCGA GGCTT ATCAG	GGGCA AAGCA TGAAG TTCCT	CGTTG GAATA TGTCC CTCTA
C) C) C) C) 25	CCCTC TTACC GCAAT TTTGG	GGAAC GTGCT ATGTG	TCGCG ACTAG CTGCC	GTTAA AGGGT TCTTT	ATGAC AGCCG CATGC	GATCG CGCCA AAATG
	TCTCA GACGC AGAGC TATAT	ACACA GGTTC ACGGG CTATT	AGTGA ACCTT CAAAA GAGTC	AGTAT TACTG GTACG CCTAC	GTCAC CTGGA CGCAT	ACATC - GACCA TCGAC
30	Group 11:64:	:				
35	GAACC GCTCG TCGTT	AGCCT ACAAG CCACT	AACAT GTCTG ACCTA	CACGT GGCTA CTTAT	GGGGC TGTAG CGCAC	CTCCA ATATT TAATA
	TGGCG CCTTT CAAAC TGATC	TTCGG GTTCC —ATCGC AGAGT	TACTC ATTTA GAGCG ACCGG	TTGTC GCGGA CTTGA CGAGA	AGGTC GGAAT TCAAC GCTTC	TCCCA TTTCT TTCAT CAGTG
40	TTAAA CGTGG TAGAT GTGAC	TACGA GCCAG AAGAA ACTGC	CCGCC CGGTT CATCA AGTAC	AAAGC GATGT ATGCA CTATG	AGACA GCAGG CTGAG	GGTAA AATTG ATGGT

45

	Group 12:64:					
	TGCTT CTCAT	GAGCA CTGTC	ATATG AGAAT	TTACA TATTG	GGATC CTGCA	ACACG GCAAA
5	ATTAA CTAAA	TACGT AGTCG	GCCCT ACCTC	AAGAC CGCGA	ACCCA GGTAT	GTCTA CGAGT
	CCTAG	GTCCC	TTCAC	GTGCG	TGGCC	TCGCT.
	TTGAG	TCAAT	GATGA	AGCTA	GGCAC	CTTCT
10	GCGGT CGTTT	ACGAA AGGCT	ATCGG GAAAG	CCGGG GAAGC	TGGAA AAATA	TGTGG GGGTG
10	CACCG	TCAGC	CCATG	GCTCC	CTTGC	CACTC
C)	AATCC	TCCAG	AAGTT	CATAA	CAACC	TCTTA
	TGACG	CGGAG	GTAGT	ACAGA		
#						
15						
15	Group 13:64:					
C)	Group 13.04.					
<u> </u>	TTTGT	ATTAG	TAAGA	TCGAA	CGACA	ACTTC
<sup>5</sup> 20	AGAAA	GTAGA	AAGTC	CCTAT	GCGTA	CGTCC
	ACCGT	TCTTG	GAATT	TCCCC	ATCCG	GCTGC
는 기 기 디 25	GTCAA	GATAA	GGTCG	TTCTC	TGGCT	AGGGG
w. Ti	GGGAC	CCATC	GTGGT	GTTTT	AACTA	TCGGC
T 26	AAACC	GGCCA	TGAGT	AATGA	CTCCT	GTGCC
드 25 디	CAGGC	TATAC	GACGG	AGGTT	AGCCC	TACAT
	CAGAT CCCGA	GCACG AATCT	GTGTG TGCAG	GGCAT CTGAA	CGCGG CGGTG	TTTCA ACACT
	CCCAC	TAGCG	CTAGG	CAAAG	TTAAC	ATTGC
	GGAGC	ACCTG	TGTTA	ACGCA	TIAAC	AIIGC
30						
·	Group 14:64:					
	CGGTC	GCTGG	GTCGC	TTTCC	TTGTA	CACAC
35	GCGTT	ACAAC	CGTCT	ACTCT	CGAAA	AGTTG
	CTTGG	AGCTT	ACGTA	AGTGC	TGGAG	AGTCA
	CTCCG	TTAGT	GTAAT	TTACG	GGGGA	ACAGT
	TCATC	ATCGA	CCCAT	CCCGC	GCAAG	TGCCC
40	TTCAG	GAAGA	AAACG	TAACA	CAAAT	ATGAG
40	AATAA	ATATA	TGCGA	GGCAG	GCTAC	CTATC
	CCGGA TACTT	CACCA GGTGT	GAGAA	TTTTT	CAGGG	GATCT
	GAGCC	TATGG	CATTG TCCTG	GGACC TAGGC	GACTG AAGGT	ATGCT AATTC
	CTTT	CTCAT	CCATT	TAGGC	MAGGI	MIIC

TCTAA

GGATT

GTTTA

45

CTGAT

### Group 15:64:

	AATTA	TAGTG	TATAG	GGGGT	GGTCC	TGAAA
	CTTAA	AAGCT	CCCTG	CTGTG	GCCTT	CGAAG
5	CCTCG	TATCA	TAACC	TTGGT	CATTT	CCATA
	TAAGT	CGTGA	AGGGA	GTCGA	GGTTG	AGATC
	TGTCT	ATCTT	GACAT	TCAGA	GGAGG	AAGAG
	AGGCG	GTTAT	TGCGG	CCCGT	TTTCG	CACGA
	GAATC	ATACC	CAACT	GCACT	TTGAC	ACTGG
10	GCCAA	CCGAT	TGCTC	GTGCA	GCGAG	GACCG
	GAGTA	TTTTA	AGCGT	CGCTA	TCCGC	TCTAT
	CGGCC	CTAGC	GTATG	ATCCA	AACAC	ACAAT
	TTTGC	CCCCC	ACGTC	AATGC		

DN16

Group (	0	:	6	4	:
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5	GATTT	CCTTT	GAAAA	TGGTT	AAAGT	CGCTC
	AAGAT	CAAGC	TAACG	GCCTC	TGCAA	CAATG
	AGAAC	TCAAA	ACTAT	TCAGT	GGGAA	TTCTA
	TTGCT	GTAAG	GGTAC	TTAGA	TAGTC	CCACA
	CTCTT	AACTT	TCTGA	ACCGC	TACAC	GACGA
10	AACAG	TGGGG	GCACC	GTGGC	GGCTG	GTCCA
	TATGT	GGACT	AGCGA	TGATG	GATCA	TCCCG
	TCTCC	GCGGG	GTCGT	CGCCG	ATTGG	GTATC
C)	AGTTA	ATACT	CTTCC	CCCAG	CTTAT	TTGAG
L)	GTTTG	CGTAG	CATGG	AACCC	CCGAC	CAGGA
[ ] 15 [ 기계	CTGCG	CGATA	ACGTG	AGGCA		
*.						
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(j) =:	Group 1:64:					
單 20	GTAAA	TCAGG	ACTCC	AAAGC	CCTGT	GCCCG
e Cj	GGATG	CAACG	AATGG	TATCG	CTCAA	TGCCG
	GAGGA	TAATC	CAAGT	TGCTA	ACCAA	TAGAA
þi Gl	GGCTC	TACGC	CGGGG	TTATA	CTCGG	CTACC
	ATCTG	TTTAG	CATAC	CCCCT	GACAG	AGAGA
T 25	CCAGA	ACTTA	GCACA	GCTTG	TCCAC	CTGGC
	CCGCA	AAACA	ATGTC	TGGGT	TCTTC	ACCTT
te f	TGACC	TTGAT	AGCAT	GTTCA	CGTCA	ACGAG
	AGGTA	ATTGT	CGAAT	CGGAC	TCGTG	GGCGT
••	TGTGA	GGTGC	CAGTT	GCGGC	CACTA	GGTCT
30	GTATT	ATCCT	GCGAT	CTTTT		
	Group 2:64:					
	010ap 2.04.					
35	TAGGG	GCGTC	GTTTC	TTGGC	CCCCA	TTCGA
	TAATT	AGGTG	GGGCG	CCAAT	CTAGT	ATTCC
	TGCTG	GTCCG	TACCC	AGCAG	GTTCT	ACTCG
	TTAAG	CCCGG	CGCCT	GATAG	TACAA	TCATA
	CAGAG	TCCCT	CCTAA	GGAGA	CCACC	AGACC
40	CCGTT	TCTGC	CGATG	AGCGC	CGGTA	ACAGG
	TATCA	ATGAT	CATGT	GCATT	CAGTC	CTTTG
	TTGTT	TGAAC	TTTAC	GGCAA	GACTA	ACGAC
	ACCAT	CAACA	AATAC	GACGT	ATAAA	GTAGC
	GAGGC	AAACT	CTCTC	GCTCA	CGTGC	ATCTA
45	GGGAT	TTGCA	ACGGA	AGTAA		

	010ap 3.01.					
	ACGGT	CGGCA	ATACG	CCTTC	AACGC	CGCGC
	CGACG	CGGGT	GTGAA	AGCAA	CTAGA	TCGTA
5	GAACT	TGTGC	GCCCC	TTCTT	TGCCT	TCAAG
	CCTGG	TAAGG	TCCTC	ATCAC	CACTT	ACATT
	GTTGT	TTAGC	CACAG	GCATA	AAATC	CTAAT
	GCAGC	GAGAC	GGTAG	TGACA	AATAT	TATTC
	TTGCG	GCTAT	TGGAT	GATGG	ATGTT	TACCA
10	ATTTG	TCTCG	CTTTA	ATTGA	CTCCC	AGGCC
	GTCGG	GGTTA	AAGCG	GGGCT	TCCGT	AGCTG
	CATCC	AGAGG	GAGTG	GTGTC	AAAAA	CCCAA
	CGATT	AGTAC	TAGGA	TGGTG		
41						
15						
~~. . #4	Group 4:64:					
4) G1						
e: Fi	TAAAT	CGTAT	AAAAG	CAAGA	ACGAT	GAACA
Hr Mi.	TTCGC	AACGG	TATGA	ATCAA	TCCAA	CGCGT
다 <sup>(1)</sup> 20	CAGAA	AACCT	GCGCA	GAGGG	AATGT	ATGCC
_ Cl	CTGGT	ACTCA	GAGTT	AAGTA	CAGCC	TGTAC
	CAATC	AGCTC	GCAAC	ATGGA	TAGCA	TCTCT
Ci	GCCGT	CTACG	CTTAC	GTTAG	CCTGC	CGTCG
Ō.	TTCCG	TCGGG	GACAC	ACATG	GGCGA	AGACT
(四) (二) 25	GGATA	GTCCT	ATAAC	CCATT	CACTG	GATTC
	CGCTA	CTTGA	ATTTC	GGGAG	CCGAG	CATCT
	TGAGC	GGTCA	GTAGG	AGTGG	TCACC	CGCCC
	GCTTT	TTATT	TGTTG	TTGTG		
30						
30	Group 5:64:					
	Group 3.04.					
	GGGCC	TCTAG	ACCGA	GAAAT	CATAG	CCTCC
	GTTAC	AACAA	TGCGC	CGGAA	ATGAA	TAAAA
35	ATAAG	CGCTT	ACGCA	ACTGT	TCCAT	AAGTG
	CTTCG	CTGGG	AATCG	CAGCA	TTCTG	GCTAA
	TGGTA	CCCCG	CTATA	AGCGG	GAACG	CACGG
	TGTAT	GCCGC	TACCT	TACTA	TAGAC	GTGTT
	AGATA	GACCC	TAGGT	AAGGC	ACACC	TTATC
40	TCATG	CCAAC	GTCGA	GCGTG	GTACA	CCTTA
	CCGTC	ATTTT	GATTA	CATTC	CTGCT	CGAGC
	TGACT	AGTTC	GGAGT	CCAGT	AGGAC	GTCAG
	GGTGG	GATCT	ATCCC	TTTGA		
4.5						
45						

Group 3:64:

	010up 0.04.					
	AGGCT	CATAT	GCCTA	GAAAC	TGATT	ACAGC
	TCGTC	CAGAC	CCAAG	CGCAA	CAATA	CTCTG
5	CGGCG	GCCAG	AACGA	GGCCC	CTACT	ACTTC
	CTCGC	GCGCG	TACCG	AGCAC	TGTAA	TGCGT
	TTGAA	ATAGA	TTAGG	TAAAG	ACTAA	GAAGG
	AAGCC	TATGC	TGTCG	CCCCC	TAGCT	AGATG
	TATTA	TTTAT	CGTGT	GTCAT	AGTTT	AAAAT
10	CCGGT	TCGAT	ATTCG	GGACA	GGGTA	GAGGT
	CGAAC	GCATC	GCTGA	GTGAG	CCTCA	TCACT
	AGGAG	GATCC	GTTGG	TTCCA	CGGGA	ACCCT
C)	CCTTG	CTTTC	CTGTT	TGGGC	000011	710001
<u>I</u>	00110	01110	02022	10000		
<b>₽</b> 15						
	Group 7:64:					
15	01000					
	TCCGG	CGGGC	AAAAC	GGAAG	GACAA	TGCAC
	GTCTC	CAATT	AGTGT	GCAGT	GGCCG	GCGAA
<u> </u>	CGTTC	TGGCA	AGTAG	TTAAT	CGACT	CTTCA
₽	AACTG	ACTTT	ACGGC	CTAAC	CGTAA	GACCT
	ACCCC	ATAGG	CTTAG	TACAG	TCGGT	CACGC
j. Li	GATAC	CTCGT	CATTA	TGAGA	AGACG	GTGGG
	CCGTG	GTATA	GATTG	GGTGA	TAGTT	GGGTC
[]25	ATGTA	TCTAC	CAGCG	TCACA	TAAGC	AAGGA
	ATCAT	TTGCC	ATTCT	GTACC	TCCTA	TGTTT
C)	CGGAT	TTATG	TATCT	CCTGA	ACATA	TCGAG
	GCGCT	TTGGA	CCAGG	AGCCA		
30						
	Group 8:64:					
	TTTTC	GCCCA	ATATC	GGAAA	GTTGA	CAGTA
	AGTCC	CTGAC	TCACG	ACCAC	CGATC	TGAAT
35	AAAGA	CGTTA	CACAT	CCTCT	GATGC	CTAAG
	CTACA	TATAA	GCGAC	GGGGG	CTCGA	GGCGC
	GTCTT	ATTAT	TAATG	AGGAT	AATCA	TCTGT
	CACCC	AACCG	AATAG	CGGCT	GAGAG	GTGTA
	CCGAA	GTTCG	ACGCT	CCGCG	GGTTT	AAATT
40	AACTC	TCCTT	ATCGT	TTCAA	ACTTG	ATGGC
	TCGGA	CCCTA	TAGCC	TGCCA	TTGGG	TATTT
	GCATG	AGAAG	CGCAG	CAAGG	TGGAC	GAGCT
	CCAGC	ACAAA	GCCGG	GTACT		
45						

Group 6:64:

Group	9:	64	:
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10	TAGTA ATACA CATCG CCCTT ATAAT CCGGC ATCTC AGATT GCCAC AAAGG GCTAG	TATCC CACAA TTCGT GCCGA TAAAC GATAT AGGGC ATGCG ACTAC CATGA GGACG	GTAAC AGGAA GCTTA AATTT CTGTA CAGGT GAATG ACTGA TCTGG TTTTG	ACGTT ATAGC AACCA AGTCT CGACC CCAAA TGTCA TCATT ACCCG GACTC GTGGA	TTTAA TTACT CGCTG GCGCC TACGG TGGTC GTGAT GAAGT CGTAC GTTGC	CTTGT CACCT TAGAG TCGCA GGCGG TTCCC GGCCT GGGTT CTCAG TGCAT
1 (전 기 (전) 기 (전) 기 (전) 기 (전)	Group 10:64:		20100			
T. T	CCACG CCGTA ATTCA CCGCT TTACC GCAAT TTTGG TCTCA GACGC AGAGC	GCAGA TGATA CGAGG GCTGT GGAAC GTGCT ATGTG ACACA GGTTC ACGGG	AACGT GCCTG TGGGA TAACT TCGCG ACTAG CTGCC AGTGA ATAGT CAAAA	GAGAT TCCGA GGCTT ATCAG GTTAA AGGGT TCTTT AGTAT TACTG GTACG	GGGCA AAGCA TGAAG TTCCT ATGAC AGCCG CATGC GTCAC CTGGA CGCAT	CGTTG GAATA TGTCC CTCTA GATCG CGCCA AAATG ACATC GACCA TCGAC
30	TATAT  Group 11:64:	CTATT	GAGTC	CCTAC		
35	GAACC GCTCG TCGTT TGGCG CAGCT CAAAC	AGCCT ACAAG CCACT TTCGG GTTCC ATCGC	AACAT GTCTG GCCAT TACTC ATTTA GAGCG	CACGT GGCTA ACCTA TTGTC GCGGA TGTGT	GGGGC TGTAG CGCAC AGGTC GGAAT TCAAC	CTCCA ATATT TAATA TCCCA TTTCT TTCAT
40	TGATC TTAAA CGTGG TAGAT GTGAC	AGAGT TACGA GACTT AAGAA ACTGC	ACCGG CCGCC CGGTT CATCA CTGAG	CGAGA ATTAC GATGT ATGCA CTATG	GCTTC AGACA GCAGG CCCTC	CAGTG GGTAA AATTG ATGGT
45						

Group 12	2:	64	:
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S ATTAA TACGT GCCCT AAGAC ACCCA GTCTA CTAAA AGTCG ACCTC CGCGA GGTAT CGACT CCTAG GTCCC TTCAC GTGCG TGGCC TCGCT TGTTC TCAAT GATGA AGCTA GGCAC CTTCT GCGGT ACGAA ATCGG CCGGG TGGAA TGTGC CACCG TCAGC CCATG GCTCC CTTGC CACTC AATCC TCCAG AAGTT CATAA CACC TCTTA GCGGT TGACC CCATG GCTCC CTTGC CACTC AATCC TCCAG AAGTT ACAGA  GTOUP 13:64:  GTOUP 13:64:  GGGAC CCATC GTAGT ACGAA ACGC TCTTA GCGTA ACGCA ACGC TCTTA GCGTA ACGCA ACGC TCTTA GCGTA ACGCA ACGC TCTTA GCGTA ACGCA ACGCA ACGCA CTTGTA GCGTA ACGCA ACGCA ACGCA GTAGT TCTTG GAATT TCCCC ATCCG GCTGCA CGGGAC CCATC GTGGT GTTTT AACTA TCGGCA CGGGAC CCATC GTGGT GTTTT AACTA TCGGCA CCCAGC TATAC GACGG AGGTT ACCCC TACAT GCCC ACCCC TATAC GACGG AGGTT AGCCC TACAT GCCC ACCCC TATAC GACGG AGGTT AGCCC TACAT GCCC ACCCC TAGAC GTGTG GCCAT CGGGG TTTCA CCCCAC TAGCG CTAGG CAAAG TTAAC ATTGCC GGAGC ACCTC TTGTA GCTCT GGAGC ACCTC TTGTA GCTCT GGAGC TATAC GACAC GTGTA GCTCT CCCCAC TAGCG CTAGG CAAAG TTAAC ATTGCC GGAGC ACCTC TTGTA GCTCT GGAGC TATAC GACAC GTGTA GCTCT GGAGC TATAC GACAC CTGAA CGGTG ACACT CCCCAC TAGCG CTAGG CAAAG TTAAC ATTGCC GGGTC GCTGG GTGTA GCTCT  GCGGTC GCTGG GTCGC TTTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG		TGCTT CTCAT	GAGCA CTGTC	ATATG AGAAT	TTACA TATTG	GGATC TTTTT	ACACG GCAAA
CTAAA AGTCG ACCTC CGCGA GGTAT CGAGG CCTAG GTCCC TTCAC GTGCG TGGCC TCGCC TGGTC GTCGC TTCAC GTGCG TGGCC CTTCT GCGGT ACGAA ATCGG CCGGG TGGAA TGTGC CACCG TCAGC CCATG GCCC CTTGC CACCG TCAGC CCATG GTCC CTTGC CACTG AATCC TCCAG AAGTT CATAA CAACC TCTTA TGACG CGGAG GTAGT ACAGA  TTGACG CGGAG GTAGT ACAGA  GTOUD 13:64:  GTOUD 14:64:  GTOUD 13:64:  G	5						
CCTAG GTCCC TTCAC GTGCG TGGCC TCGCT TGTTC TCAAT GATGA AGCTA GGCAC CTTCT GCGGT ACGAA ATCGG CCGGG TGGAA TGTGG CACCG TCAGC CCATG GCTCC CTTGC CACTC AATCC TCCAG AAGTT CATAA CAACC TCTTF TGACG CGGAG GTAGT ACAGA  GTUP 13:64:  GTUP 13:	,						
TGTTC TCAAT GATGA AGCTA GGCAC CTTCT GCGGT ACGAA ATCGG CCGGG TGGAA TGTGG CACCG TCAGC CCATG GAAGC AAATA GGGTC CACCG TCAGC CCATG GCTCC CTTGC CACTC AATCC TCCAG AAGTT CATAA CAACC TCTTA TGACG CGGAG GTAGT ACAGA  F15  TGTTT ATTAG TAAGA TCGAA CGACA ACGTC ACGTA ACGTC CCTTG GCTA CGTAC ACGTA ACGTC CCTAT GCGTA ACGTC ACGTA ACGTC CCTAT ACACA ACGTC ACGTA ACGTC CCTAT ACCTA ACGTC ACGTA ACGTC ACGTC ACGTC ACGTA ACGTC ACGTC ACGTC ACGTA ACGTC ACGTC ACGTC ACGTC ACGTA ACGTC A							
GCGGT ACGAA ATCGG CCGGG TGGAA TGTGC CACCG TCAGC CCATG GCTCC CTTGC CACTG AATCC TCCAG AAGTT CATAA CAACC TCTTA  TGACG CGGAG GTAGT ACAGA  TGACG CGGAG GTAGT ACAGA  TTGACG CGGAG GTAGT ACAGA  TTGACG CGGAG GTAGT ACAGA  TTGACG CGGAG GTAGT ACAGA  TTTTAG TATAG TAAGA TCGAA CGACA ACGCC AAGAAA GTAGA AAGTC CCTAT GCGTA CGTCC ACCGT TCTTG GAATT TCCCC ATCCG GCTGC  GCTCAA GATAAA GGTCG TTCTC TGGCT ACGGG GGGAC CCATC GTGGT GTTTT AACTA TCGGC AAAACC GGCCA TGAGT AATGA CTCCT GTGCC AACCG GCTGC GTGGC GTGCC CCGA AATCT TGCAG CGGAT CGCGG TTCCA CCCGA AATCT TGCAG CTGAA CGGTG ACACT CCCGA AATCT TGCAG CTGAA CGGTG ACACT GCGGC TATAG GACG GTGT GGCT TTAAC ATTGC GCGGT ACACT TGTTA GCTCT TGGAG ACACT CCCAC TAGGG CTAGG CAAAG TTAAC ATTGC GCGTT ACAAC CGTCT ACTCT CGAAA ACTTGC GCGTT ACAAC CGTCT ACTCT CGAAA ACTTGC GCGTT ACAAC CGTCT ACTCT CGAAA ACTTGC TCATC ATCGA CCCAT CGCG GCAAG TTAACC TTCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAC GCTAC CTATC GCGC TATGG CAAAG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAC GCTAC CTATC GAGCC TATGG CAAGG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAC GCTAC CTATC GAGCC TATGG TCATTG GGACC GACGG ACGGG TACTT GGTGT CATTG GGACC GACGG AGGT ACTT GGTGT CATTG GGACC GACGG ACGGC TACCT GTGAT TATGC ACGCG GGGAA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATCC GGGCC TATGG TCCTG TAGGC AAGGT AATCC GAGCC TATGG TCCTG TAGGC AAGGT AATCC GAGCC TATGG TCCTG TAGGC AAGGT AATCC							
10 CGTTT AAGGG GAAAG GAAGC AAATA GGGTC CACCG TCACC CCATG GCTCC CTTGC CACTC AATCC TCCAG AAGTT CATAA CAACC TCTTF TGACG CGGAG GTAGT ACAGA  TGACG CGGAG GTAGT ACAGA  TTTGT ATTAG TAAGA TCGAA CGACA ACGCC TCTTF TTTGT ATTAG TAAGA TCGAA CGACA ACGCC TCTTG GAATT TCCCC ATCCG GCTGC ACCGT TCTTG GAATT TCCCC ATCCG GCTGC GCTGC GACA GACA ACGCC TCTTG GAATT TCCCC ATCCG GCTGC GCGAC CCATC GTGGT GTTTT AACTA TCGGC CAGGC TATAC GACGG AGGTT AGCCC TACAT CCCCA TAGCG CTGCA GGGCA CGGGG TTCCC CCCAC TAGCG CTAGG CAAAG TTAAC GCGG ACACT CCCCAC TAGCG CTAGG CAAAG TTAAC ATTGCC GGAGC ACCTG TGTTA GCTCT CGAAA AGTTG CCCCAC TAGCG CTAGG CAAAG TTAAC ATTGC GGAGC ACCTG TGTTA GCTCT CGAAA AGTTG CCCCAC TAGCG CTAGG CAAAG TTAAC ATTGC TCCCG TTAGCT TGCAC CTGAA AGTTG TCATC ACCTG TGTAT TTACG ACGCG ACACT TCATC ACCTG TGTAT TTACG ACGCG ACCAT TCATC ATCGA CCCAT CCCGC GCAAG TCCCC TTCAG GAAGA AACG TAACA CAAAT ATGAG AATAA ATATA TCGCA GCCAT CCCGC GCAAG TCCCC TTCAG GAAGA AACG TAACA CAAAT ATGAG AATAA ATATA TCGCA GCCA CACAC CACAT CCCGC ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TCCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TCGCA GCCAT CCCGC GCAAG TCCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TCGCA GCCAT CCCGC GCAAG TCCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TCCGA GCCAT CCCGC GCAAG TCCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TCCGA GCCAT CCCGC GCAAG TCCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TCCGA GCCAT CCCGC GCAAG TCCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TCCGA GCCAT CCCGC GCAAG TCCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TCCGA GCCA CCCAT CCCGC GCAAG TCCCC TTCAG GAGCC TATGG TCCTG TAGGC AAGGT AATCC GAGCC TATGG TCCTG TAGGC AAGGT AATCC GAGCC TATGG TCCTG TAGGC AAGGT AATCC							
CACCG TCAGC CCATG GCTCC CTTGC CACTC AATCC TCCAG AAGTT CATAA CAACC TCTTA  TGACG CGGAG GTAGT ACAGA  TTTGT ATTAG TAAGA TCGAA CGACA ACGCC AGACA ACGCC AGACA ACGCC AGACA ACGCC AGACA ACGCC AGACA ACGCC ATCCG GCTCC ATCCG GCTCC ATCCC ATCCC GCTCC ATCCC ATCCC GCTCC ATCCC ATCCC GCTCC ATCCC ATCCC ATCCC GCTCC ATCCC ACCCC ATCCC ATCCC ATCCC ATCCC ATCCC ATCCC ATCCCC ATCCCCC ATCCCCCC ATCCCCC ATCC	10						
AATCC TCCAG AAGTT CATAA CAACC TCTTA TGACG CGGAG GTAGT ACAGA  TCATC ATCGA  CTCCG GTAGT ACAGA  TCATC ATCGA  TCATC ATCGA  TCATC ATCGA  ACAGA  TCATC ATCGA  CCCAT CCCGC GCAAG  TCCCG  TTCAG GAAGA  AATAA  ATATA TGCGA  GAGCA  TACTT GGTGT CATTG GGACA  CACAG  GAGCC  TACTT  GAGCC  TACTT  GGTGT CATTG  GAGCC  TACTT  GGACC  TACTT  GGACC  TACTT  GGACC  TACTT  GGACC  TACTT  GGACC  TACTT  GGACC  TACTT  TCTAA  AATATA  ATATA  TGCGA  TCATC  GAGCC  TATGG  TCATT  TCTAA  AATATA  TCGGC  AAGGT  TACTT  GGACC  TACTT  TCTAA  AATATA  TCGGC  TACTT  TCTAA  AATATA  TCGGC  TACTT  TCTAA  AATATA  TCGGC  TACTT  TCTAA  AATATA  TCGGC  TACTT  TCTAA  AATAC  TCATC  TACTT  GGACC  TACTT  TCTAA  AATATA  TCGGC  TACTT  TCTAA  AATATA  TCGGC  TACTT  TCTAA  AATATA  TCGGC  TACTT  TCTAA  TCTATC  TCTATC  TCTATC  TACTT  TCTAA  TCTATC  TCTAA  TCTATC  TCTA	10						
Group 13:64:  Group 14:64:  Gr							
Group 13:64:  Group 14:64:  Gr						CAACC	TCTTA
Group 13:64:  TTTGT ATTAG TAAGA TCGAA CGACA ACGCC AGAAA GTAGA AAGTC CCTAT GCGTA CGTCC GACA GACCT TCTTG GAATT TCCCC ATCCG GCTGC GGGAC CCATC GTGGT GTTTT AACTA TCGGC CAGGC TATAC GACGG AGGTT AGCCC TACAT CAGGC TATAC GACGG AGGTT AGCCC TACAT CCCGA TAGCG GTGTG GGCAT CGCGG TTCCA CCCGA TAGCG GTGTG GGCAT CGCGG TTCAAT CCCCAC TAGCG CTAGA CGGTG ACACT CCCCAC TAGCG CTAGA CGGTG ACACT CCCCAC TAGCG CTAGA CGCGG TATAC GGGAC ACCTG TGTTA GCTCT  30  Group 14:64:  CCGGT GCTGG GTCGC TTTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG CTCCG TTAGT GTAAT TTACG ACGCG ACGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG ACACT CCCGC GCAAG TGCCC TTCAG AAACC TACAC CCGC GCAAG TGCCC TTCAG AAACC TACAC CCGC GCAAG TGCCC TTCAG GAAGA AAACC TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC GAGCC TATGG TCCTG TAGCC CAGGG GGGAA  AATAA ATATA TGCGA GGCAG GCTAC CTATC GAGCC TATGG TCCTG TAGGC AAGGT AATTC GGGCC TATGG TCCTG TAGGC AAGGT AATTC GGGCC TATGG TCCTG TAGGC AAGGT AATTC GGGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA	<b>C</b> ]	TGACG	CGGAG	GTAGT	ACAGA		
Group 13:64:  TTTGT ATTAG TAAGA TCGAA CGACA ACGCC AGAAA GTAGA AAGTC CCTAT GCGTA CGTCC GACA GACCT TCTTG GAATT TCCCC ATCCG GCTGC GGGAC CCATC GTGGT GTTTT AACTA TCGGC CAGGC TATAC GACGG AGGTT AGCCC TACAT CAGGC TATAC GACGG AGGTT AGCCC TACAT CCCGA TAGCG GTGTG GGCAT CGCGG TTCCA CCCGA TAGCG GTGTG GGCAT CGCGG TTCAAT CCCCAC TAGCG CTAGA CGGTG ACACT CCCCAC TAGCG CTAGA CGGTG ACACT CCCCAC TAGCG CTAGA CGCGG TATAC GGGAC ACCTG TGTTA GCTCT  30  Group 14:64:  CCGGT GCTGG GTCGC TTTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG CTCCG TTAGT GTAAT TTACG ACGCG ACGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG ACACT CCCGC GCAAG TGCCC TTCAG AAACC TACAC CCGC GCAAG TGCCC TTCAG AAACC TACAC CCGC GCAAG TGCCC TTCAG GAAGA AAACC TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC GAGCC TATGG TCCTG TAGCC CAGGG GGGAA  AATAA ATATA TGCGA GGCAG GCTAC CTATC GAGCC TATGG TCCTG TAGGC AAGGT AATTC GGGCC TATGG TCCTG TAGGC AAGGT AATTC GGGCC TATGG TCCTG TAGGC AAGGT AATTC GGGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA	4)						
TTTGT ATTAG TAAGA TCGAA CGACA ACGCC AGAAA GTAGA AAGTC CCTAT GCGTA CGTCC ATCCG GCTGC GTCAA GATAA GGTCG TTCTC TGGCT AGGGG GGGAC CCATC GTGGT GTTTT AACTA TCGGC AAAACC GGCCA TGAGT AATGA CTCCT GTGCC CAGGC TATAC GACGG AGGTT AGCCC TACAT CCCGA AATCT TGCAG CTGAA CGGTG ACACT CCCCAC TAGCG CTAGG CAAAG TTAAC ATTGC GGAGC ACCTG TGTTA GCTCT GCGTC GCGCA TGATA GCTCT GCGAA AATCT TGCAG CTGAA CGGTG ACACT GCGCT TAGCG CTAGG CAAAG TTAAC ATTGC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC  40 CCGGA CACCA GAGAA CTGCA CAGGG GGGAA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATCT GGGCC TATGG TCCTG TAGGC AAGGT ATCCT GAGCC TATGG TCCTG TAGCA CAGAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCCA GGCAG GCTAC CTATC GGGCC TATGG TCCTG TAGGC AAGGT AATCT GGGCC TATGG TCCTG TAGGC AAGGT AATTC GGAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA	<u>‡</u> 13						
AGAAA GTAGA AAGTC CCTAT GCGTA CGTCC  # GTCAA GATAA GGTCG TCTC TGCC ATCCG GCTGC  # GTCAA GATAA GGTCG TCTC TGGCT AGGGG  # GGAC CCATC GTGGT GTTT AACTA TCGGC  # AAACC GGCCA TGAGT AATGA CTCCT GTGCC  # CAGGC TATAC GACGG AGGTT AGCCC TACAT  # CCGAT GCAGG GTGTG GCAT CGCGG TTTCA  # CAGGC TATAC GACGG AGGTT AGCCC TACAT  # CCCAC TAGCG CTGAA CGGTG ACACT  # CCCAC TAGCG CTAGG CAAAG TTAAC ATTGC  # GGAGC ACCTG TGTTA GCTCT  # CCGTC GCTGG GTCTA ACTCT CGAAA AGTTG  # GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG  # CTCCG TTAGT GTAAT TTACG ACGCC ACAGT  # TCATC ATCGA CCCAT CCCGC GCAAG TGCCC  # TTCAG GAAGA AAACG TAACA CAAAT ATGAG  # AATAA ATATA TGCGA GGCAG GCTAC CTATC  # AATAA ATATA TGCGA GAGAA CTGCA CAGGG GGGGA  # AATAG CACCA GAGAA CTGCA CAGGG GGGGA  # AATAG CACCA GAGAA CTGCA CAGGG ACGT  # AATAG CACCA GAGAA CTGCA CACCA CAGGG ACGT  # AATAG CACCA	41	_					
### GTCAA GATAA GGTCG TTCTC TGGCT AGGGG GGGAC CCATC GTGGT GTTTT AACTA TCGGC AAACC GGCCA TGAGT AATGA CTCCT GTGCC CAGGC TATAC GACGG AGGTT AGCCC TACAT CCGAAT GCACG GTGTG GGCAT CGCGG TTCCA CCCGA AATCT TGCAG CTGAA CGGTG ACACT CCCCAC TAGCG CTAGG CAAAG TTAAC ATTGC GGAGC ACCTG TGTTA GCTCT  GCGTC GCTGG GTCTC TTCC GCGAA AGTCT GCGCT TATAC ACCTC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTGA CCCCAC TAGCG CTAGA CGCC ACACC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTGA CCCCG TTAGT GTAAT TTACG ACGCG ACACT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC GCGGA CACCA GAGAA CTGCA CAGGG GGGGA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATCC GTTTA CTGAT GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA	<u> </u>						
GTCAA GATAA GGTCG TTCTC TGGCT AGGGG GGGAC CCATC GTGGT GTTTT AACTA TCGGC AAACC GGCCA TGAGT AATGA CTCCT GTGCC CAGGC TATAC GACGG AGGTT AGCCC TACAT CCCGA AATCT TGCAG CTGAA CGGTG ACACT CCCCAC TAGCG CTAGG CAAAG TTAAC ATTGC GGAGC ACCTG TGTTA GCTCT  GCGTC GCTGG GTGTA GCTCT  GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TCACC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GCCAG GCTAC CTATC GCGGAC CCCAC GAAGA CTCCC CTATC GAGCC TATGG CAAAC CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC GAGCC TATGG TCATC GAACA CAAGT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC GAGCC TATGG TCCTG TAGGC AAGGT ATGCT GAGCC TATGG TCCTG TAGGC AAGGT ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC							
GGGAC CCATC GTGGT GTTTT AACTA TCGGC AAACC GGCCA TGAGT AATGA CTCCT GTGCC CAGGC TATAC GACGG AGGTT AGCCC TACAT CAGAT GCACG GTGTG GGCAT CGCGG TTTCA CCCGA AATCT TGCAG CTGAA CGGTG ACACT CCCAC TAGCG CTAGG CAAAG TTAAC ATTGC GGAGC ACCTG TGTTA GCTCT  GCGTC GCTGG GTCTC TTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG CCCCG TAGAC CGTCT ACTCT CGAAA AGTTG CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC CCGGA CACCA GAGAA CTGCA CAGGG GGGGA TACTT GGTGT CATTG GGACC CACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATCA CCGGA CACCA GAGAA CTGCA CAGGG GGGGA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA	<b>Ⅲ20</b>						
AAACC GGCCA TGAGT AATGA CTCCT GTGCC CAGGC TATAC GACGG AGGTT AGCCC TACAT CT25 CAGAT GCACG GTGTG GGCAT CGCGG TTTCA CCCGA AATCT TGCAG CTGAA CGGTG ACACT CCCAC TAGCG CTAGG CAAAG TTAAC ATTGC GGAGC ACCTG TGTTA GCTCT  GGGTC GCTGG GTCGC TTTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC CCGGA CACCA GAGAA CTGCA CAGGG GGGAA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATCC GGGCC TATGG TCCTG TAGGC AAGGT AATCC GAGCC TATGG TCCTG TAGGC AAGGT AATTC GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC							
CAGGC TATAC GACGG AGGTT AGCCC TACAT  CAGGT GCACG GTGTG GGCAT CGCGG TTTCA CCCGA AATCT TGCAG CTGAA CGGTG ACACT CCCAC TAGCG CTAGG CAAAG TTAAC ATTGC GGAGC ACCTG TGTTA GCTCT  GCGTC GCTGG GTCGC TTTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC TACTT GGTGT CATTG GGACC GACTG TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GAGCC TATGG TCCTG TAGGC AAGGT AATTC GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC							
CCCGA AATCT TGCAG CTGAA CGGTG ACACT CCCCAC TAGCG CTAGG CAAAG TTAAC ATTGC GGAGC ACCTG TGTTA GCTCT  CGGTC GCTGG GTCGC TTTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG  35 CTTGG AGCTT ACGTA AGTGC TGGAG AGTCA CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC 40 CCGGA CACCA GAGAA CTGCA CAGGG GGGGA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA							
CCCGA AATCT TGCAG CTGAA CGGTG ACACT CCCAC TAGCG CTAGG CAAAG TTAAC ATTGC GGAGC ACCTG TGTTA GCTCT  30  Group 14:64:  CGGTC GCTGG GTCGC TTTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG CTGGG AGCTT ACGTA AGTGC TGGAG AGTCA CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC 40  CCGGA CACCA GAGAA CTGCA CAGGG GGGAA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA							
GCCAC TAGCG CTAGG CAAAG TTAAC ATTGC GGAGC ACCTG TGTTA GCTCT  30  Group 14:64:  CGGTC GCTGG GTCGC TTTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG CTCGG AGCTT ACGTA AGTGC TGGAG AGTCA CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC CCGGA CACCA GAGAA CTGCA CAGGG GGGGA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC							
GGAGC ACCTG TGTTA GCTCT  30  Group 14:64:  CGGTC GCTGG GTCGC TTTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG ACTCCG TTGGG AGCTT ACGTA AGTGC TGGAG AGTCA CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC ACGGA CACCA GAGAA CTGCA CAGGG GGGAA CACCA GAGAA CTGCA CAGGG GGGAA CACCA GAGAA CTGCA CAGGG GGGGA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA							
Group 14:64:  CGGTC GCTGG GTCGC TTTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG TCTTGG AGCTT ACGTA AGTGC TGGAG AGTCA CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC CCGGA CACCA GAGAA CTGCA CAGGG GGGAA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA						TTAAC	ATTGC
Group 14:64:  CGGTC GCTGG GTCGC TTTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG ACACC CGTCT ACTCT CGAAA AGTTG ACTCG ACGCG ACAGT TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC CCGGA CACCA GAGAA CTGCA CAGGG GGGGA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA		GGAGC	ACCTG	TGTTA	GCTCT		
CGGTC GCTGG GTCGC TTTCC TTGTA CACAC GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG 35 CTTGG AGCTT ACGTA AGTGC TGGAG AGTCA CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC CCGGA CACCA GAGAA CTGCA CAGGG GGGAA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA	30	C					
GCGTT ACAAC CGTCT ACTCT CGAAA AGTTG  CTTGG AGCTT ACGTA AGTGC TGGAG AGTCA CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC  CCGGA CACCA GAGAA CTGCA CAGGG GGGAA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA		Group 14:64:					
35 CTTGG AGCTT ACGTA AGTGC TGGAG AGTCA CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC 40 CCGGA CACCA GAGAA CTGCA CAGGG GGGA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA		CGGTC	GCTGG	GTCGC	TTTCC	TTGTA	CACAC
CTCCG TTAGT GTAAT TTACG ACGCG ACAGT TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC  40 CCGGA CACCA GAGAA CTGCA CAGGG GGGGA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA			ACAAC	CGTCT	ACTCT	CGAAA	AGTTG
TCATC ATCGA CCCAT CCCGC GCAAG TGCCC TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC  40 CCGGA CACCA GAGAA CTGCA CAGGG GGGGA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA	35	CTTGG	AGCTT	ACGTA	AGTGC	TGGAG	AGTCA
TTCAG GAAGA AAACG TAACA CAAAT ATGAG AATAA ATATA TGCGA GGCAG GCTAC CTATC  40 CCGGA CACCA GAGAA CTGCA CAGGG GGGGA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA		CTCCG	TTAGT	GTAAT	TTACG	ACGCG	ACAGT
AATAA ATATA TGCGA GGCAG GCTAC CTATC  40 CCGGA CACCA GAGAA CTGCA CAGGG GGGGA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA		TCATC	ATCGA	CCCAT	CCCGC	GCAAG	TGCCC
40 CCGGA CACCA GAGAA CTGCA CAGGG GGGGA TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA		TTCAG	GAAGA	AAACG	TAACA	CAAAT	ATGAG
TACTT GGTGT CATTG GGACC GACTG ATGCT GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA		AATAA	ATATA	TGCGA	GGCAG	GCTAC	CTATC
GAGCC TATGG TCCTG TAGGC AAGGT AATTC GTTTA CTGAT GGATT TCTAA	40	CCGGA	CACCA	GAGAA	CTGCA	CAGGG	GGGGA
GTTTA CTGAT GGATT TCTAA		TACTT	GGTGT	CATTG	GGACC		
GTTTA CTGAT GGATT TCTAA		GAGCC	TATGG	TCCTG	TAGGC	AAGGT	AATTC
45		GTTTA	CTGAT				
	45						

### Group 15:64:

	AATTA	TAGTG	TATAG	GGGGT	GGTCC	TGAAA
	CTTAA	AAGCT	CCCTG	CTGTG	GCCTT	CGAAG
5	CCTCG	ATGGG	TAACC	TTGGT	CATTT	CCATA
	TAAGT	CGTGA	AGGGA	CTCAC	GGTTG	AGATC
	TGTCT	ATCTT	GACAT	TCAGA	GGAGG	AAGAG .
	AGGCG	GTTAT	TGCGG	CCCGT	TTTCG	CACGA
	GAATC	ATACC	CAACT	GCACT	TTGAC	ACTGG
10	GCCAA	CCGAT	TGCTC	GTGCA	GCGAG	GACCG
	GAGTA	TCGCC	AGCGT	TTTTA	TCCGC	TCTAT
	CGGCC	CTAGC	GTATG	ATCCA	AACAC	ACAAT
<b>≠</b> į	TTTGC	ACCAG	ACGTC	AATGC		

## APPENDIX 4 Simulation Results

5 Using pool D16 Using sequence r300 True Signal: fp=CTCGA pool=7 True Signal: fp=CTACG pool=1 10 True Signal: fp=CTACG pool=2 True Signal: fp=GTACC pool=0 True Signal: fp=ATCGC pool=1 True Signal: fp=GAATG pool=15 True Signal: fp=ATCGG pool=13 True Signal: fp=GTCGC pool=13 J) True Signal: fp=ACCCA pool=14 đ١ True Signal: fp=CTGGG pool=10 True Signal: fp=CAATT pool=3 <sup>(1)</sup>20 True Signal: fp=GACAA pool=1 True Signal: fp=TACTA pool=3 C) True Signal: fp=ACCCC pool=6 <u>|</u>= True Signal: fp=AGACA pool=10 True Signal: fp=TTCCA pool=8 **1**25 True Signal: fp=TTCCA pool=4 True Signal: fp=ACGCA pool=8 C) True Signal: fp=GACAC pool=2 True Signal: fp=CGACA pool=10 True Signal: fp=CGACA pool=11 30 True Signal: fp=CTACT pool=10 True Signal: fp=CCCCC pool=9 True Signal: fp=CCCCC pool=14 True Signal: fp=TTCCC pool=12 True Signal: fp=GCCCA pool=1 35 True Signal: fp=GAGAA pool=8 True Signal: fp=CCAGC pool=5 True Signal: fp=CAGAG pool=3 True Signal: fp=GCAGA pool=1 True Signal: fp=GCAGC pool=12 40 True Signal: fp=CGCGA pool=3 True Signal: fp=AGCGC pool=0 True Signal: fp=GGACC pool=1 True Signal: fp=CCAGG pool=7 True Signal: fp=TTAGG pool=1 45 True Signal: fp=GAGAG pool=1 True Signal: fp=TAAAA pool=11 True Signal: fp=AGCGG pool=4 True Signal: fp=ACTAA pool=15

r300.0.0.out

```
True Signal: fp=CGGGC pool=4
       True Signal: fp=ACTAC pool=4
       True Signal: fp=ACTAC pool=7
       True Signal: fp=AGGGG pool=9
  5
       True Signal: fp=AGGGG pool=5
       True Signal: fp=TTTAA pool=15
       True Signal: fp=GGGGC pool=7
       True Signal: fp=CAGAT pool=11
       True Signal: fp=CATGA pool=14
       True Signal: fp=AATGC pool=1
 10
       True Signal: fp=CCCCT pool=13
       True Signal: fp=GACAT pool=4
       True Signal: fp=TCTTC pool=8
C)
       True Signal: fp=CCAGT pool=10
Ľ)
<u>‡</u>15
       True Signal: fp=CCAGT pool=9
       True Signal: fp=GCTAC pool=9
True Signal: fp=TTTAG pool=11
ű
       True Signal: fp=TGAGA pool=12
٥ì
       True Signal: fp=TGCCG pool=8
(1)20
       True Signal: fp=GCGCT pool=15
       True Signal: fp=CGCGT pool=4
True Signal: fp=TGAGG pool=7
       True Signal: fp=TCGGG pool=1
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C)
       True Signal: fp=CGGGT pool=8
@125
       True Signal: fp=CGGGT pool=12
True Signal: fp=GGCGT pool=12
True Signal: fp=TATCA pool=4
       True Signal: fp=ATATC pool=2
       True Signal: fp=CTATC pool=6
       True Signal: fp=GGGGT pool=11
 30
       True Signal: fp=GGGGT pool=14
       True Signal: fp=TATCG pool=3
       True Signal: fp=GCTAT pool=3
       True Signal: fp=GATGT pool=0
 35
       True Signal: fp=TGGCT pool=6
       True Signal: fp=CTCAA pool=15
       True Signal: fp=ATCAG pool=6
       True Signal: fp=CGATA pool=8
       True Signal: fp=CTGAC pool=5
 40
       True Signal: fp=GTATT pool=11
       True Signal: fp=ATGAG pool=8
       True Signal: fp=GCCTC pool=0
       True Signal: fp=GTGAA pool=2
       True Signal: fp=GCGTA pool=0
 45
       True Signal: fp=GCGTA pool=9
       True Signal: fp=GCCTG pool=12
       True Signal: fp=GGATG pool=1
       True Signal: fp=GTGAG pool=0
```

```
True Signal: fp=TTAAC pool=2
       True Signal: fp=AAAGC pool=1
       True Signal: fp=AAAGC pool=6
       True Signal: fp=AAGCC pool=8
  5
       True Signal: fp=CTCAT pool=8
       True Signal: fp=AGATT pool=12
       True Signal: fp=CAGCC pool=10
       True Signal: fp=CGCAC pool=4
       True Signal: fp=AAAGG pool=1
 10
       True Signal: fp=GACCC pool=9
       True Signal: fp=CCCTT pool=1
       True Signal: fp=CGATT pool=11
       True Signal: fp=GAAGC pool=5
True Signal: fp=TCATG pool=1
ű
       True Signal: fp=AGGAC pool=15
       True Signal: fp=TGCTA pool=4
j
       True Signal: fp=GAAGG pool=10
       True Signal: fp=AATAA pool=2
       True Signal: fp=TGCTG pool=9
C)
       True Signal: fp=GGCAG pool=1
<u></u> 20
       True Signal: fp=GAGCG pool=3
True Signal: fp=CTTGG pool=1
       True Signal: fp=ACAAT pool=6
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C
       True Signal: fp=ACTCA pool=7
125
       True Signal: fp=TCCAC pool=10
       True Signal: fp=AATAG pool=13
C)
       True Signal: fp=GATAA pool=1
Ci
       True Signal: fp=TACGA pool=6
       True Signal: fp=TATTC pool=2
 30
       True Signal: fp=CCTCC pool=3
       True Signal: fp=TAACG pool=14
       True Signal: fp=AAGCT pool=12
       True Signal: fp=AAGCT pool=5
       True Signal: fp=ACTCG pool=15
 35
       True Signal: fp=CAGCT pool=9
       True Signal: fp=TCCAG pool=8
       True Signal: fp=TCCAG pool=2
       True Signal: fp=CGCAT pool=11
       True Signal: fp=TCGAC pool=9
 40
       True Signal: fp=TCGAC pool=13
       True Signal: fp=GCTCA pool=5
       True Signal: fp=AGGAT pool=8
       True Signal: fp=TAGGA pool=15
       True Signal: fp=AGTGA pool=14
 45
       True Signal: fp=TAGGC pool=13
       True Signal: fp=TACGG pool=7
       True Signal: fp=TAGGG pool=13
       True Signal: fp=AATAT pool=13
```

A41 -

```
True Signal: fp=GGTGC pool=1
       True Signal: fp=GGTGC pool=4
       True Signal: fp=TCCAT pool=9
       True Signal: fp=TGAAT pool=10
  5
       True Signal: fp=TATTT pool=6
       True Signal: fp=TGTCC pool=10
       True Signal: fp=AACTA pool=11
       True Signal: fp=AACTA pool=3
       True Signal: fp=CACTC pool=7
 10
       True Signal: fp=CTCCA pool=6
       True Signal: fp=AAGTA pool=7
       True Signal: fp=CAGTA pool=8
       True Signal: fp=GACTC pool=14
True Signal: fp=GTCCA pool=3
Ľ)
₽15
       True Signal: fp=CTGCA pool=11
       True Signal: fp=ATAGG pool=12
1
ď)
      -True Signal: fp=GTAGA pool=8
đ١
     True Signal: fp=GTAGA pool=9
True Signal: fp=TGTCT pool=0
420
       True Signal: fp=CAGTG pool=15
       True Signal: fp=GTAGC pool=14
True Signal: fp=GTGCC pool=10
---
       True Signal: fp=CAAAC pool=11
True Signal: fp=GTAGG pool=3
125
       True Signal: fp=AAAAG pool=0
True Signal: fp=AAAAG pool=2
True Signal: fp=ACACG pool=5
       True Signal: fp=GAAAG pool=14
       True Signal: fp=CCCGA pool=15
 30
       True Signal: fp=AGCCC pool=10
       True Signal: fp=AGAGA pool=13
       True Signal: fp=ATGCT pool=6
       True Signal: fp=AGAGC pool=14
       True Signal: fp=GCTTA pool=9
 35
       True Signal: fp=AGGCC pool=12
       True Signal: fp=CGGCA pool=10
       True Signal: fp=GCCGA pool=7
       True Signal: fp=CCTTG pool=2
       True Signal: fp=GCTTC pool=5
 40
       True Signal: fp=TTCGC pool=10
       True Signal: fp=GCACG pool=10
       True Signal: fp=TTGGC pool=12
       True Signal: fp=GTGCT pool=9
       True Signal: fp=ACGGG pool=11
 45
       True Signal: fp=ACGGG pool=3
       True Signal: fp=GCGGC pool=11
     0 True Signal: fp=TAGAA pool=15
       True Signal: fp=CCACT pool=13
```

```
True Signal: fp=GGGCG pool=2
       True Signal: fp=TCAGA pool=9
       True Signal: fp=CGTAA pool=6
       True Signal: fp=TAGAC pool=11
       True Signal: fp=CTTAT pool=13
       True Signal: fp=AGCCT pool=0
       True Signal: fp=CGTAC pool=7
       True Signal: fp=CATCG pool=7
       True Signal: fp=TCGCA pool=7
 10
       True Signal: fp=TCCCG pool=11
       True Signal: fp=AGTAG pool=9
       True Signal: fp=AGGCT pool=10
       True Signal: fp=GGCCT pool=8
重
丰15
       True Signal: fp=TCGCG pool=5
       True Signal: fp=GGTAG pool=10 -
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       True Signal: fp=GGTAG pool=3
L)
       True Signal: fp=GGGCT pool=8
Œ١
       True Signal: fp=TGGGG pool=1
C)
       True Signal: fp=AGTAT pool=0
120
       True Signal: fp=ATGTC pool=9
       True Signal: fp=TGACT pool=9
True Signal: fp=CTGTC pool=11
þek
       True Signal: fp=GTCTC pool=4
True Signal: fp=CTGTG pool=3
#125
       True Signal: fp=CTAAA pool=14
\times True Signal: fp=ACATC pool=13
       True Signal: fp=GTAAA pool=13
       True Signal: fp=ATAAG pool=13
       True Signal: fp=AGCTA pool=4
 30
       True Signal: fp=GTCTT pool=13
       True Signal: fp=AGCTG pool=3
       True Signal: fp=AGGTC pool=1
       True Signal: fp=CGCTG pool=12
       True Signal: fp=GGCTC pool=14
 35
       True Signal: fp=AGGTG pool=8
       True Signal: fp=GGGTA pool=10
       True Signal: fp=GGGTA pool=15
       True Signal: fp=GGCTG pool=2
       True Signal: fp=GGGTC pool=10
 40
       True Signal: fp=CGAAA pool=3
       True Signal: fp=ATTCA pool=13
       True Signal: fp=ATTCA pool=6
       True Signal: fp=TTCAA pool=9
       True Signal: fp=TTCAA pool=12
 45
       True Signal: fp=AACGA pool=11
       True Signal: fp=ACGAA pool=13
       True Signal: fp=ATTCC pool=2
       True Signal: fp=CCGAA pool=12
```

```
True Signal: fp=CCGAA pool=14
       True Signal: fp=CATTC pool=13
       True Signal: fp=CCATT pool=11
       True Signal: fp=GGGTG pool=6
  5
       True Signal: fp=AGAAG pool=0
       True Signal: fp=CCCAG pool=3
       True Signal: fp=CCCAG pool=5
       True Signal: fp=CACGC pool=10
       True Signal: fp=CTTCC pool=14
       True Signal: fp=CTTCC pool=6
 10
       True Signal: fp=TTATT pool=0
       True Signal: fp=GATTC pool=12
       True Signal: fp=GATTC pool=14
       True Signal: fp=CAGGA pool=15
L)
       True Signal: fp=GCATT pool=15
<u></u> = 15
       True Signal: fp=AGCTT pool=4
Ľį.
       True Signal: fp=ATTCG pool=9
(T
       True Signal: fp=ATTCG pool=5
C)
       True Signal: fp=CGAAG pool=14
120
       True Signal: fp=CACGG pool=9
       True Signal: fp=AAGGG pool=13
E
C)
       True Signal: fp=GAGGC pool=11
<u>-</u>--
       True Signal: fp=GGCTT pool=11
C)
       True Signal: fp=AAACT pool=4
125
       True Signal: fp=TCAAA pool=4
       True Signal: fp=TCAAC pool=5
       True Signal: fp=CAACT pool=4
       True Signal: fp=AGAAT pool=10
       True Signal: fp=AATTT pool=8
       True Signal: fp=TACCC pool=5
 30
       True Signal: fp=ACGAT pool=1
       True Signal: fp=CGAAT pool=12
       True Signal: fp=TAAGG pool=1
       True Signal: fp=AAGGT pool=9
       True Signal: fp=AAGGT pool=12
 35
       True Signal: fp=GCTGA pool=12
       True Signal: fp=TGCAG pool=5
       True Signal: fp=TAGCG pool=5
       True Signal: fp=GCGAT pool=14
 40
       True Signal: fp=GCTGC pool=10
       True Signal: fp=GCTGG pool=1
       True Signal: fp=GGTCG pool=0
       True Signal: fp=TCAAT pool=4
       True Signal: fp=TAAGT pool=2
       True Signal: fp=CCTGT pool=5
 45
       True Signal: fp=TCTCG pool=12
       True Signal: fp=TGTGA pool=9
       True Signal: fp=GCTGT pool=2
```

```
True Signal: fp=GGTCT pool=13
       True Signal: fp=CAATA pool=7
       True Signal: fp=GAATA pool=0
       True Signal: fp=GAATA pool=15
  5
       True Signal: fp=ATTTA pool=1
       True Signal: fp=ATTTA pool=12
                                       NOTE ? 700 NON-TRUE SENAIS NOT SHOWN
       GGTAGGGGTA GACATCGCGT AAAAGGGGCG TACCCAGGAC CCCCCTTGGC TCAATAAGTA
       GCGCTGGGGT GCTACTACGG GTCTCGACAC GCATTCAACT AAAAGCTTCC ATTCGCACGG
 10
       GCTTATTTAA CGAAGGTCGC GATAAGGTGC CGAATAGGCT GCAGAGCGGC AGCCTGTCCA
       GTGAATGCTG TGAGGCCTCC AGCTGACTCA TGAGAGAAGC CCAGTATTCA AACTACGATT
       CCACTCGACA ATTTAGGATG TCTTCCCGAA AGCTATCGGG TAGAATATCA GATTCGTTTA
       DotsOn=286
       GGTAGGGGTA GACATCGCGT AAAAGGGGCG TACCCAGGAC CCCCCTTGGC TCAATAAGTA
L)
       GCGCTGGGGT GCTACTACGG GTCTCGACAC GCATTCAACT AAAAGCTTCC ATTCGCACGG
đ١
       GCTTATTTAA CGAAGGTCGC GATAAGGTGC CGAATAGGCT GCAGAGCGGC AGCCTGTCCA
       GTGAATGCTG TGAGGCCTCC AGCTGACTCA TGAGAGAAGC CCAGTATTCA AACTACGATT
₡ 20
       CCACTCGACA ATTTAGGATG TCTTCCCGAA AGCTATCGGG TAGAATATCA GATTCGTTTG
DotsOn=286
C
       GGTAGGGGTA GACATCGCGT AAAAGGGGCG TACCCAGGAC CCCCCTTGGC TCAATAAGTA
□125
       GCGCTGGGGT GCTACTACGG GTCTCGACAC GCATTCAACT AAAAGCTTCC ATTCGCACGG
       GCTTATTTAA CGAAGGTCGC GATAAGGTGC CGAATAGGCT GCAGAGCGGC AGCCTGTCCA
       GTGAATGCTG TGAGGCCTCC AGCTGACTCA TGAGAGAAGC CCAGTATTCA AACTACGATT
       CCACTCGACA ATTTAGGATG TCTTCCCGAA AGCTATCGGG TAGAATATCA GATTCGTTTT
 30
       DotsOn=286
       GTAGGGGTAG ACATCGCGTA AAAGGGGCGT ACCCAGGACC CCCCTTGGCT CAATAAGTAG
       CGCTGGGGTG CTACTACGGG TCTCGACACG CATTCAACTA AAAGCTTCCA TTCGCACGGG
       CTTATTTAAC GAAGGTCGCG ATAAGGTGCC GAATAGGCTG CAGAGCGGCA GCCTGTCCAG
 35
       TGAATGCTGT GAGGCCTCCA GCTGACTCAT GAGAGAAGCC CAGTATTCAA ACTACGATTC
       CACTCGACAA TTTAGGATGT CTTCCCGAAA GCTATCGGGT AGAATATCAG ATTCGTTTAA
       True solution DotsOn=286
 40
      GTAGGGGTAG ACATCGCGTA AAAGGGGCGT ACCCAGGACC CCCCTTGGCT CAATAAGTAG
      CGCTGGGGTG CTACTACGGG TCTCGACACG CATTCAACTA AAAGCTTCCA TTCGCACGGG
      CTTATTTAAC GAAGGTCGCG ATAAGGTGCC GAATAGGCTG CAGAGCGGCA GCCTGTCCAG
      TGAATGCTGT GAGGCCTCCA GCTGACTCAT GAGAGAAGCC CAGTATTCAA ACTACGATTC
      CACTCGACAA TTTAGGATGT CTTCCCGAAA GCTATCGGGT AGAATATCAG ATTCGTTTTG
 45
       DotsOn=286
```

A45 -

Solutions: 5

#### r300.100.0.out

5

Using pool D16
Using sequence r300
True Signal: fp=CTCGA pool=7
True Signal: fp=CTACG pool=1

True Signal: fp=CTACG pool=1 True Signal: fp=CTACG pool=2 True Signal: fp=GTACC pool=0 10 True Signal: fp=ATCGC pool=1 True Signal: fp=GAATG pool=15 True Signal: fp=ATCGG pool=13 C) L) True Signal: fp=GTCGC pool=13 True Signal: fp=ACCCA pool=14 True Signal: fp=CTGGG pool=10 True Signal: fp=CAATT pool=3 C) C) True Signal: fp=GACAA pool=1 True Signal: fp=TACTA pool=3 Ē) True Signal: fp=ACCCC pool=6 صً 20 True Signal: fp=AGACA pool=10 True Signal: fp=TTCCA pool=8 True Signal: fp=TTCCA pool=4 True Signal: fp=ACGCA pool=8 True Signal: fp=GACAC pool=2 True Signal: fp=CGACA pool=10 True Signal: fp=CGACA pool=11 True Signal: fp=CTACT pool=10 True Signal: fp=CCCCC pool=9 True Signal: fp=CCCCC pool=14 30 True Signal: fp=TTCCC pool=12 True Signal: fp=GCCCA pool=1 True Signal: fp=GAGAA pool=8 True Signal: fp=CCAGC pool=5 True Signal: fp=CAGAG pool=3 35 True Signal: fp=GCAGA pool=1 True Signal: fp=GCAGC pool=12 True Signal: fp=CGCGA pool=3 True Signal: fp=AGCGC pool=0 True Signal: fp=GGACC pool=1 40 True Signal: fp=CCAGG pool=7 True Signal: fp=TTAGG pool=1 True Signal: fp=GAGAG pool=1 True Signal: fp=TAAAA pool=11 True Signal: fp=AGCGG pool=4 45 True Signal: fp=ACTAA pool=15 True Signal: fp=CGGGC pool=4 True Signal: fp=ACTAC pool=4

True Signal: fp=ACTAC pool=7

A46 -

```
True Signal: fp=AGGGG pool=9
        True Signal: fp=AGGGG pool=5
        True Signal: fp=TTTAA pool=15
       True Signal: fp=GGGGC pool=7
  5
        True Signal: fp=CAGAT pool=11
        True Signal: fp=CATGA pool=14
        True Signal: fp=AATGC pool=1
       True Signal: fp=CCCCT pool=13
       True Signal: fp=GACAT pool=4
        True Signal: fp=TCTTC pool=8
  10
        True Signal: fp=CCAGT pool=10
        True Signal: fp=CCAGT pool=9
True Signal: fp=GCTAC pool=9
可
手15
        True Signal: fp=TTTAG pool=11
       True Signal: fp=TGAGA pool=12
       True Signal: fp=TGCCG pool=8
Ü
        True Signal: fp=GCGCT pool=15
٥ì
       True Signal: fp=CGCGT pool=4
True Signal: fp=TGAGG pool=7
صًّ
20
       True Signal: fp=TCGGG pool=1
        True Signal: fp=CGGGT pool=8
C)
       True Signal: fp=CGGGT pool=12
Ļ.i
       True Signal: fp=GGCGT pool=12
True Signal: fp=TATCA pool=4
<u>0</u>25
       True Signal: fp=ATATC pool=2
       True Signal: fp=CTATC pool=6
       True Signal: fp=GGGGT pool=11
       True Signal: fp=GGGGT pool=14
        True Signal: fp=TATCG pool=3
  30
        True Signal: fp=GCTAT pool=3
       True Signal: fp=GATGT pool=0
        True Signal: fp=TGGCT pool=6
       True Signal: fp=CTCAA pool=15
        True Signal: fp=ATCAG pool=6
  35
       True Signal: fp=CGATA pool=8
       True Signal: fp=CTGAC pool=5
        True Signal: fp=GTATT pool=11
       True Signal: fp=ATGAG pool=8
       True Signal: fp=GCCTC pool=0
  40
       True Signal: fp=GTGAA pool=2
       True Signal: fp=GCGTA pool=0
       True Signal: fp=GCGTA pool=9
       True Signal: fp=GCCTG pool=12
       True Signal: fp=GGATG pool=1
 45
       True Signal: fp=GTGAG pool=0
       True Signal: fp=TTAAC pool=2
       True Signal: fp=AAAGC pool=1
        True Signal: fp=AAAGC pool=6
```

```
True Signal: fp=CTCAT pool=8
       True Signal: fp=AGATT pool=12
       True Signal: fp=CAGCC pool=10
  5
       True Signal: fp=CGCAC pool=4
       True Signal: fp=AAAGG pool=1
       True Signal: fp=GACCC pool=9
       True Signal: fp=CCCTT pool=1
       True Signal: fp=CGATT pool=11
 10
       True Signal: fp=GAAGC pool=5
       True Signal: fp=TCATG pool=1
       True Signal: fp=AGGAC pool=15
       True Signal: fp=TGCTA pool=4
C)
       True Signal: fp=GAAGG pool=10
T)
丰 15
       True Signal: fp=AATAA pool=2
4
       True Signal: fp=TGCTG pool=9
4]
       True Signal: fp=GGCAG pool=1
٥١
       True Signal: fp=GAGCG pool=3
True Signal: fp=CTTGG pool=1
1 20
       True Signal: fp=ACAAT pool=6
       True Signal: fp=ACTCA pool=7
True Signal: fp=TCCAC pool=10
in the
       True Signal: fp=AATAG pool=13
True Signal: fp=GATAA pool=1
T 25
       True Signal: fp=TACGA pool=6
True Signal: fp=TATTC pool=2
True Signal: fp=CCTCC pool=3
       True Signal: fp=TAACG pool=14
       True Signal: fp=AAGCT pool=12
 30
       True Signal: fp=AAGCT pool=5
       True Signal: fp=ACTCG pool=15
       True Signal: fp=CAGCT pool=9
       True Signal: fp=TCCAG pool=8
       True Signal: fp=TCCAG pool=2
 35
       True Signal: fp=CGCAT pool=11
       True Signal: fp=TCGAC pool=9
       True Signal: fp=TCGAC pool=13
       True Signal: fp=GCTCA pool=5
       True Signal: fp=AGGAT pool=8
 40
       True Signal: fp=TAGGA pool=15
       True Signal: fp=AGTGA pool=14
       True Signal: fp=TAGGC pool=13
       True Signal: fp=TACGG pool=7
       True Signal: fp=TAGGG pool=13
 45
       True Signal: fp=AATAT pool=13
       True Signal: fp=GGTGC pool=1
       True Signal: fp=GGTGC pool=4
       True Signal: fp=TCCAT pool=9
```

True Signal: fp=AAGCC pool=8

```
True Signal: fp=TGAAT pool=10
        True Signal: fp=TATTT pool=6
        True Signal: fp=TGTCC pool=10
        True Signal: fp=AACTA pool=11
   5
        True Signal: fp=AACTA pool=3
        True Signal: fp=CACTC pool=7
        True Signal: fp=CTCCA pool=6
        True Signal: fp=AAGTA pool=7
        True Signal: fp=CAGTA pool=8
  10
        True Signal: fp=GACTC pool=14
        True Signal: fp=GTCCA pool=3
        True Signal: fp=CTGCA pool=11
True Signal: fp=ATAGG pool=12
        True Signal: fp=GTAGA pool=8
  15
        True Signal: fp=GTAGA pool=9
        True Signal: fp=TGTCT pool=0
True Signal: fp=CAGTG pool=15
        True Signal: fp=GTAGC pool=14
        True Signal: fp=GTGCC pool=10
  20
        True Signal: fp=CAAAC pool=11
        True Signal: fp=GTAGG pool=3
True Signal: fp=AAAAG pool=0
        True Signal: fp=AAAAG pool=2
        True Signal: fp=ACACG pool=5
  25
        True Signal: fp=GAAAG pool=14
        True Signal: fp=CCCGA pool=15
        True Signal: fp=AGCCC pool=10
        True Signal: fp=AGAGA pool=13
        True Signal: fp=ATGCT pool=6
  30
        True Signal: fp=AGAGC pool=14
        True Signal: fp=GCTTA pool=9
        True Signal: fp=AGGCC pool=12
        True Signal: fp=CGGCA pool=10
        True Signal: fp=GCCGA pool=7
        True Signal: fp=CCTTG pool=2
  35
        True Signal: fp=GCTTC pool=5
        True Signal: fp=TTCGC pool=10
        True Signal: fp=GCACG pool=10
        True Signal: fp=TTGGC pool=12
  40
        True Signal: fp=GTGCT pool=9
        True Signal: fp=ACGGG pool=11
        True Signal: fp=ACGGG pool=3
        True Signal: fp=GCGGC pool=11
        True Signal: fp=TAGAA pool=15
  45
        True Signal: fp=CCACT pool=13
        True Signal: fp=GGGCG pool=2
        True Signal: fp=TCAGA pool=9
        True Signal: fp=CGTAA pool=6
```

```
True Signal: fp=CTTAT pool=13
       True Signal: fp=AGCCT pool=0
       True Signal: fp=CGTAC pool=7
  5
       True Signal: fp=CATCG pool=7
       True Signal: fp=TCGCA pool=7
       True Signal: fp=TCCCG pool=11
       True Signal: fp=AGTAG pool=9
       True Signal: fp=AGGCT pool=10
 10
       True Signal: fp=GGCCT pool=8
       True Signal: fp=TCGCG pool=5
       True Signal: fp=GGTAG pool=10
       True Signal: fp=GGTAG pool=3
C
       True Signal: fp=GGGCT pool=8
15
15
       True Signal: fp=TGGGG pool=1
       True Signal: fp=AGTAT pool=0
0
0
1
1
20
       True Signal: fp=ATGTC pool=9
       True Signal: fp=TGACT pool=9
       True Signal: fp=CTGTC pool=11
       True Signal: fp=GTCTC pool=4
       True Signal: fp=CTGTG pool=3
True Signal: fp=CTAAA pool=14
       True Signal: fp=ACATC pool=13
       True Signal: fp=GTAAA pool=13
二
[]25
       True Signal: fp=ATAAG pool=13
       True Signal: fp=AGCTA pool=4
C
       True Signal: fp=GTCTT pool=13
True Signal: fp=AGCTG pool=3
       True Signal: fp=AGGTC pool=1
 30
       True Signal: fp=CGCTG pool=12
       True Signal: fp=GGCTC pool=14
       True Signal: fp=AGGTG pool=8
       True Signal: fp=GGGTA pool=10
       True Signal: fp=GGGTA pool=15
 35
       True Signal: fp=GGCTG pool=2
       True Signal: fp=GGGTC pool=10
       True Signal: fp=CGAAA pool=3
       True Signal: fp=ATTCA pool=13
       True Signal: fp=ATTCA pool=6
 40
       True Signal: fp=TTCAA pool=9
       True Signal: fp=TTCAA pool=12
       True Signal: fp=AACGA pool=11
       True Signal: fp=ACGAA pool=13
       True Signal: fp=ATTCC pool=2
 45
       True Signal: fp=CCGAA pool=12
       True Signal: fp=CCGAA pool=14
       True Signal: fp=CATTC pool=13
       True Signal: fp=CCATT pool=11
```

True Signal: fp=TAGAC pool=11

```
True Signal: fp=GGGTG pool=6
       True Signal: fp=AGAAG pool=0
       True Signal: fp=CCCAG pool=3
       True Signal: fp=CCCAG pool=5
  5
       True Signal: fp=CACGC pool=10
       True Signal: fp=CTTCC pool=14
       True Signal: fp=CTTCC pool=6
       True Signal: fp=TTATT pool=0
       True Signal: fp=GATTC pool=12
 10
       True Signal: fp=GATTC pool=14
       True Signal: fp=CAGGA pool=15
       True Signal: fp=GCATT pool=15
       True Signal: fp=AGCTT pool=4
       True Signal: fp=ATTCG pool=9
Ľ)
<u>-</u> 15
       True Signal: fp=ATTCG pool=5
       True Signal: fp=CGAAG pool=14
True Signal: fp=CACGG pool=9
Ţ,
       True Signal: fp=AAGGG pool=13
٥ì
       True Signal: fp=GAGGC pool=11
C)
[] 20
       True Signal: fp=GGCTT pool=11
       True Signal: fp=AAACT pool=4
£
True Signal: fp=TCAAA pool=4
       True Signal: fp=TCAAC pool=5
       True Signal: fp=CAACT pool=4
True Signal: fp=AGAAT pool=10
       True Signal: fp=AATTT pool=8
True Signal: fp=TACCC pool=5
True Signal: fp=ACGAT pool=1
       True Signal: fp=CGAAT pool=12
 30
       True Signal: fp=TAAGG pool=1
       True Signal: fp=AAGGT pool=9
       True Signal: fp=AAGGT pool=12
       True Signal: fp=GCTGA pool=12
       True Signal: fp=TGCAG pool=5
 35
       True Signal: fp=TAGCG pool=5
       True Signal: fp=GCGAT pool=14
       True Signal: fp=GCTGC pool=10
       True Signal: fp=GCTGG pool=1
       True Signal: fp=GGTCG pool=0
 40
       True Signal: fp=TCAAT pool=4
       True Signal: fp=TAAGT pool=2
       True Signal: fp=CCTGT pool=5
       True Signal: fp=TCTCG pool=12
       True Signal: fp=TGTGA pool=9
 45
       True Signal: fp=GCTGT pool=2
       True Signal: fp=GGTCT pool=13
       True Signal: fp=CAATA pool=7
       True Signal: fp=GAATA pool=0
```

```
True Signal: fp=GAATA pool=15
       True Signal: fp=ATTTA pool=1
       True Signal: fp=ATTTA pool=12
       False positive Signal: fp=CTCTG pool=11
       False positive Signal: fp=AACAT pool=6
  5
       False positive Signal: fp=GTGTC pool=0
       False positive Signal: fp=GTACT pool=0
       False positive Signal: fp=GAGAT pool=14
       False positive Signal: fp=GGTTG pool=9
 10
       False positive Signal: fp=CTTTT pool=6
       False positive Signal: fp=AGTAA pool=8
       False positive Signal: fp=GCGGC pool=11
C)
교
부
닉15
       False positive Signal: fp=ATATA pool=11
       False positive Signal: fp=CAAGA pool=9
       False positive Signal: fp=GGGTT pool=10
ű
       False positive Signal: fp=CACCT pool=1
۵ì
       False positive Signal: fp=AAATA pool=0
False positive Signal: fp=AGCAT pool=6
Œ)
       False positive Signal: fp=GTGAT pool=11
= 20
       False positive Signal: fp=GGTAG pool=6
False positive Signal: fp=GACTT pool=3
ļ= i
       False positive Signal: fp=CCGGA pool=14
False positive Signal: fp=CGATC pool=15
False positive Signal: fp=CTTGT pool=0
225
       False positive Signal: fp=CGGCC pool=6
       False positive Signal: fp=GCGGA pool=5
       False positive Signal: fp=ACATA pool=9
       False positive Signal: fp=TGATA pool=9
       False positive Signal: fp=ATAGC pool=10
       False positive Signal: fp=CTGGT pool=10
 30
       False positive Signal: fp=ATCCC pool=8
       False positive Signal: fp=ATTAG pool=6
       False positive Signal: fp=AGCTA pool=5
       False positive Signal: fp=GGCGG pool=12
       False positive Signal: fp=TATCA pool=1
 35
       False positive Signal: fp=TCAGG pool=4
       False positive Signal: fp=GATAG pool=9
       False positive Signal: fp=TTGGT pool=2
       False positive Signal: fp=TGACG pool=9
 40
       False positive Signal: fp=CCCTC pool=0
       False positive Signal: fp=AGATG pool=10
       False positive Signal: fp=CCGGC pool=14
       False positive Signal: fp=TATAT pool=11
       False positive Signal: fp=CATTA pool=14
 45
       False positive Signal: fp=GAGTA pool=10
       False positive Signal: fp=TATAA pool=11
       False positive Signal: fp=CGGTG pool=11
       False positive Signal: fp=CCCTA pool=10
```

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```
False positive Signal: fp=GCATA pool=14
        False positive Signal: fp=TGGTC pool=0
        False positive Signal: fp=AGGTT pool=11
        False positive Signal: fp=CATAC pool=15
   5
        False positive Signal: fp=TCAGC pool=10
        False positive Signal: fp=GGACT pool=12
        False positive Signal: fp=TGCTC pool=13
        False positive Signal: fp=CCATA pool=1
        False positive Signal: fp=AATTA pool=13
  10
        False positive Signal: fp=GCGAA pool=15
        False positive Signal: fp=ACCGG pool=11
CÌ
       False positive Signal: fp=GTTCA pool=2
4
       False positive Signal: fp=AGTAC pool=7
       False positive Signal: fp=GAGTC pool=6
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  15
       False positive Signal: fp=GTGCT pool=12
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       False positive Signal: fp=TCACT pool=9
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       False positive Signal: fp=CTACA pool=8
False positive Signal: fp=GACGA pool=2
đ
       False positive Signal: fp=GGTCG pool=9
       False positive Signal: fp=CTCAA pool=15
       False positive Signal: fp=TCACT pool=15
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       False positive Signal: fp=AGATC pool=12
False positive Signal: fp=GTCGG pool=10
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       False positive Signal: fp=GGGGA pool=5
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       False positive Signal: fp=TGGAG pool=1
       False positive Signal: fp=GGAGT pool=9
       False positive Signal: fp=TGCCA pool=7
       False positive Signal: fp=AAATC pool=13
       False positive Signal: fp=ACCGT pool=9
 30
       False positive Signal: fp=GACGC pool=8
       False positive Signal: fp=TAAGT pool=4
       False positive Signal: fp=TGACC pool=10
       False positive Signal: fp=GGATC pool=11
       False positive Signal: fp=GAAGG pool=7
 35
       False positive Signal: fp=CGATT pool=10
       False positive Signal: fp=GCTAG pool=10
       False positive Signal: fp=GTGGC pool=12
       False positive Signal: fp=GAATC pool=13
       False positive Signal: fp=CCATG pool=4
 40
       False positive Signal: fp=GATCA pool=10
       False positive Signal: fp=CAGTA pool=3
       False positive Signal: fp=CAACT pool=4
       False positive Signal: fp=CGCCA pool=2
       False positive Signal: fp=TATAG pool=1
 45
       False positive Signal: fp=TACTG pool=1
       False positive Signal: fp=AAAGC pool=4
       False positive Signal: fp=CGACG pool=14
       False positive Signal: fp=GTACT pool=3
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False positive Signal: fp=TAATG pool=7
        False positive Signal: fp=CGCAC pool=10
        False positive Signal: fp=GCCTC pool=0
        False positive Signal: fp=AATTT pool=1
  5
        False positive Signal: fp=CTCAC pool=14
        False positive Signal: fp=AGTCA pool=12
        False positive Signal: fp=CAGAT pool=14
        10mers:24448
        11mers:3459
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        12mers:744
        13mers:386
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        14mers:344
        15mers:337
        16mers:336
        17mers:333
18mers:330
        19mers:327
        20mers:325
        21mers:324
22mers:326
        23mers:322
        24mers:322
        25mers: 320
        26mers:319
27mers:319
        28mers:320
        29mers:316
        30mers:314
        31mers:313
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        32mers:310
        33mers:309
        34mers:307
        35mers:306
        36mers:305
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        37mers:303
        38mers:302
        39mers:304
        40mers:302
        41mers:302
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        42mers:300
        43mers:299
        44mers:298
        45mers:297
        46mers:295
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        47mers:295
        48mers:293
        49mers:291
       50mers:289
```

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51mers:289
        52mers:285
        53mers:284
        54mers:285
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        55mers:283
         56mers:282
        57mers:282
        58mers:280
        59mers:278
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        60mers:279
        61mers:276
        62mers:276
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        63mers:275
        64mers:274
        65mers:272
        66mers:274
        67mers:271
        68mers:269
        69mers:268
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        70mers:267
        71mers:266
        72mers:265
        73mers:264
        74mers:261
        75mers:260
        76mers:259
        77mers:260
        78mers:259
        79mers:257
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        80mers:255
        81mers:255
        82mers:253
        83mers:253
        84mers:253
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        85mers:251
        86mers:249
        87mers:248
        88mers:247
        89mers:248
  40
        90mers:250
        91mers:247
        92mers:246
        93mers:244
        94mers:243
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        95mers:241
        96mers:238
        97mers:237
        98mers:237
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99mers:236
        100mers:234
        101mers:234
        102mers:236
  5
        103mers:234
        104mers:230
        105mers:230
        106mers:229
        107mers:227
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        108mers:225
        109mers:226
15 15 20 CA CACACA
        110mers:224
        111mers:223
        112mers:221
        113mers:219
        114mers:219
        115mers:217
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        117mers:215
        118mers:216
        119mers:213
        120mers:212
        121mers:210
        122mers:208
        123mers:207
        124mers:207
        125mers:204
        126mers:203
        127mers:202
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        128mers:201
        129mers:201
        130mers:199
        131mers:198
        132mers:197
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        133mers:197
        134mers:195
        135mers:195
        136mers:194
        137mers:192
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        138mers:191
        139mers:190
        140mers:190
        141mers:190
        142mers:188
  45
        143mers:186
        144mers:186
        145mers:185
         146mers:184
```

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CA1 - 206444.1

```
147mers:182
        148mers:181
        149mers:180
        150mers:181
   5
        151mers:178
        152mers:177
        153mers:176
        154mers:174
        155mers:173
  10
        156mers:172
        157mers:172
        158mers:171
0 % % 15
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        159mers:170
        160mers:167
        161mers:167
        162mers:165
        163mers:165
        164mers:164
        165mers:166
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        166mers:164
167mers:161
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        168mers:159
169mers:159
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        170mers:157
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        171mers:156
        172mers:156
        173mers:156
        174mers:153
        175mers:152
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        176mers:154
        177mers:152
        178mers:150
        179mers:148
        180mers:148
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        181mers:146
        182mers:145
        183mers:144
        184mers:144
        185mers:143
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        186mers:141
        187mers:141
        188mers:139
        189mers:136
        190mers:136
  45
        191mers:137
        192mers:135
        193mers:132
        194mers:131
```

A57-

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195mers:130
         196mers:130
         197mers:129
         198mers:127
   5
         199mers:127
         200mers:126
         201mers:125
         202mers:125
         203mers:125
  10
         204mers:121
         205mers:120
         206mers:120
09479506 ... 01050
01050
         207mers:120
         208mers:117
         209mers:115
         210mers:114
         211mers:114
         212mers:112
         213mers:113
         214mers:113
         215mers:111
         216mers:108
         217mers:109
         218mers:107
         219mers:106
         220mers:106
         221mers:102
         222mers:101
         223mers:102
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         224mers:102
         225mers:98
         226mers:100
         227mers:96
         228mers:95
  35
         229mers:94
         230mers:93
         231mers:91
         232mers:92
         233mers:89
  40
         234mers:86
         235mers:85
         236mers:85
         237mers:83
         238mers:82
  45
         239mers:83
         240mers:79
         241mers:80
         242mers:78
```

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243mers:77
        244mers:74
        245mers:73
        246mers:72
   5
        247mers:72
        248mers:69
        249mers:69
        250mers:69
        251mers:67
  10
        252mers:66
        253mers:66
        254mers:65
255mers:62
        256mers:61
        257mers:59
        258mers:61
        259mers:58
        260mers:56
        261mers:55
  20
        262mers:54
        263mers:52
        264mers:53
        265mers:53
        266mers:52
  25
        267mers:48
        268mers:46
        269mers:46
        270mers:45
        271mers:45
  30
        272mers:42
        273mers:41
        274mers:38
        275mers:37
        276mers:36
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        277mers:35
        278mers:34
        279mers:32
        280mers:30
        281mers:27
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        282mers:26
        283mers:26
        284mers:25
        285mers:24
        286mers:22
  45
        287mers:21
        288mers:19
        289mers:17
        290mers:17
```

A 59 -

```
291mers:15
        292mers:14
        293mers:12
        294mers:10
   5
        295mers:9
        296mers:8
        297mers:7
        298mers:6
        299mers:5
  10
        300mers:3
        GTAGGGGTAG ACATCGCGTA AAAGGGGCGT ACCCAGGACC CCCCTTGGCT CAATAAGTAG
CGCTGGGGTG CTACTACGGG TCTCGACACG CATTCAACTA AAAGCTTCCA TTCGCACGGG
SHYSEIS CICEO
        CTTATTTAAC GAAGGTCGCG ATAAGGTGCC GAATAGGCTG CAGAGCGGCA GCCTGTCCAG
  15
        TGAATGCTGT GAGGCCTCCA GCTGACTCAT GAGAGAAGCC CAGTATTCAA ACTACGATTC
        CACTCGACAA TTTAGGATGT CTTCCCGAAA GCTATCGGGT AGAATATCAG ATTCGTTTAA
                        DotsOn=286
         True solution
  20
        GGTAGGGGTA GACATCGCGT AAAAGGGGCG TACCCAGGAC CCCCCTTGGC TCAATAAGTA
        GCGCTGGGGT GCTACTACGG GTCTCGACAC GCATTCAACT AAAAGCTTCC ATTCGCACGG
        GCTTATTTAA CGAAGGTCGC GATAAGGTGC CGAATAGGCT GCAGAGCGGC AGCCTGTCCA
        GTGAATGCTG TGAGGCCTCC AGCTGACTCA TGAGAGAAGC CCAGTATTCA AACTACGATT
        CCACTCGACA ATTTAGGATG TCTTCCCGAA AGCTATCGGG TAGAATATCA GATTCGTTTA
 25
         DotsOn=286
Ē
        Solutions: 2
```

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## r300.300.0.out

Using pool D16

```
Using sequence r300
  5
       True Signal: fp=CTCGA pool=7
       True Signal: fp=CTACG pool=1
       True Signal: fp=CTACG pool=2
       True Signal: fp=GTACC pool=0
       True Signal: fp=ATCGC pool=1
  10
       True Signal: fp=GAATG pool=15
       True Signal: fp=ATCGG pool=13
True Signal: fp=GTCGC pool=13
<u>I</u>
       True Signal: fp=ACCCA pool=14
114 16
       True Signal: fp=CTGGG pool=10
  15
       True Signal: fp=CAATT pool=3
True Signal: fp=GACAA pool=1
       True Signal: fp=TACTA pool=3
       True Signal: fp=ACCCC pool=6
 20
       True Signal: fp=AGACA pool=10
Ξ
       True Signal: fp=TTCCA pool=8
True Signal: fp=TTCCA pool=4
<u>l</u>
       True Signal: fp=ACGCA pool=8
True Signal: fp=GACAC pool=2
True Signal: fp=CGACA pool=10
       True Signal: fp=CGACA pool=11
       True Signal: fp=CTACT pool=10
       True Signal: fp=CCCCC pool=9
       True Signal: fp=CCCCC pool=14
       True Signal: fp=TTCCC pool=12
  30
       True Signal: fp=GCCCA pool=1
       True Signal: fp=GAGAA pool=8
       True Signal: fp=CCAGC pool=5
       True Signal: fp=CAGAG pool=3
       True Signal: fp=GCAGA pool=1
 35
       True Signal: fp=GCAGC pool=12
       True Signal: fp=CGCGA pool=3
       True Signal: fp=AGCGC pool=0
       True Signal: fp=GGACC pool=1
 40
       True Signal: fp=CCAGG pool=7
       True Signal: fp=TTAGG pool=1
       True Signal: fp=GAGAG pool=1
       True Signal: fp=TAAAA pool=11
       True Signal: fp=AGCGG pool=4
 45
       True Signal: fp=ACTAA pool=15
       True Signal: fp=CGGGC pool=4
       True Signal: fp=ACTAC pool=4
       True Signal: fp=ACTAC pool=7
```

```
True Signal: fp=AGGGG pool=9
       True Signal: fp=AGGGG pool=5
       True Signal: fp=TTTAA pool=15
       True Signal: fp=GGGGC pool=7
  5
       True Signal: fp=CAGAT pool=11
       True Signal: fp=CATGA pool=14
       True Signal: fp=AATGC pool=1
       True Signal: fp=CCCCT pool=13
       True Signal: fp=GACAT pool=4
 10
       True Signal: fp=TCTTC pool=8
       True Signal: fp=CCAGT pool=10
       True Signal: fp=CCAGT pool=9
True Signal: fp=GCTAC pool=9
[
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15
       True Signal: fp=TTTAG pool=11
       True Signal: fp=TGAGA pool=12
       True Signal: fp=TGCCG pool=8
True Signal: fp=GCGCT pool=15
       True Signal: fp=CGCGT pool=4
       True Signal: fp=TGAGG pool=7
(I)
20
       True Signal: fp=TCGGG pool=1
       True Signal: fp=CGGGT pool=8
True Signal: fp=CGGGT pool=12
j=
       True Signal: fp=GGCGT pool=12
True Signal: fp=TATCA pool=4.
(T
_ 25
       True Signal: fp=ATATC pool=2
       True Signal: fp=CTATC pool=6
       True Signal: fp=GGGGT pool=11
       True Signal: fp=GGGGT pool=14
       True Signal: fp=TATCG pool=3
 30
       True Signal: fp=GCTAT pool=3
       True Signal: fp=GATGT pool=0
       True Signal: fp=TGGCT pool=6
       True Signal: fp=CTCAA pool=15
       True Signal: fp=ATCAG pool=6
 35
       True Signal: fp=CGATA pool=8
       True Signal: fp=CTGAC pool=5
       True Signal: fp=GTATT pool=11
       True Signal: fp=ATGAG pool=8
       True Signal: fp=GCCTC pool=0
 40
       True Signal: fp=GTGAA pool=2
       True Signal: fp=GCGTA pool=0
       True Signal: fp=GCGTA pool=9
       True Signal: fp=GCCTG pool=12
       True Signal: fp=GGATG pool=1
 45
       True Signal: fp=GTGAG pool=0
       True Signal: fp=TTAAC pool=2
       True Signal: fp=AAAGC pool=1
       True Signal: fp=AAAGC pool=6
```

```
True Signal: fp=CTCAT pool=8
        True Signal: fp=AGATT pool=12
        True Signal: fp=CAGCC pool=10
   5
        True Signal: fp=CGCAC pool=4
        True Signal: fp=AAAGG pool=1
        True Signal: fp=GACCC pool=9
        True Signal: fp=CCCTT pool=1
        True Signal: fp=CGATT pool=11
  10
        True Signal: fp=GAAGC pool=5
        True Signal: fp=TCATG pool=1
        True Signal: fp=AGGAC pool=15
True Signal: fp=TGCTA pool=4
        True Signal: fp=GAAGG pool=10
  15
        True Signal: fp=AATAA pool=2
        True Signal: fp=TGCTG pool=9
True Signal: fp=GGCAG pool=1
        True Signal: fp=GAGCG pool=3
        True Signal: fp=CTTGG pool=1
  20
        True Signal: fp=ACAAT pool=6
5
        True Signal: fp=ACTCA pool=7
True Signal: fp=TCCAC pool=10
        True Signal: fp=AATAG pool=13
        True Signal: fp=GATAA pool=1
  25
        True Signal: fp=TACGA pool=6
        True Signal: fp=TATTC pool=2
        True Signal: fp=CCTCC pool=3
        True Signal: fp=TAACG pool=14
        True Signal: fp=AAGCT pool=12
        True Signal: fp=AAGCT pool=5
  30
        True Signal: fp=ACTCG pool=15
        True Signal: fp=CAGCT pool=9
        True Signal: fp=TCCAG pool=8
        True Signal: fp=TCCAG pool=2
  35
        True Signal: fp=CGCAT pool=11
        True Signal: fp=TCGAC pool=9
        True Signal: fp=TCGAC pool=13
        True Signal: fp=GCTCA pool=5
        True Signal: fp=AGGAT pool=8
  40
        True Signal: fp=TAGGA pool=15
        True Signal: fp=AGTGA pool=14
        True Signal: fp=TAGGC pool=13
        True Signal: fp=TACGG pool=7
        True Signal: fp=TAGGG pool=13
  45
        True Signal: fp=AATAT pool=13
        True Signal: fp=GGTGC pool=1
        True Signal: fp=GGTGC pool=4
        True Signal: fp=TCCAT pool=9
```

True Signal: fp=AAGCC pool=8

```
True Signal: fp=TATTT pool=6
        True Signal: fp=TGTCC pool=10
        True Signal: fp=AACTA pool=11
   5
        True Signal: fp=AACTA pool=3
        True Signal: fp=CACTC pool=7
        True Signal: fp=CTCCA pool=6
        True Signal: fp=AAGTA pool=7
        True Signal: fp=CAGTA pool=8
  10
        True Signal: fp=GACTC pool=14
        True Signal: fp=GTCCA pool=3
        True Signal: fp=CTGCA pool=11
The train first and the first first first
        True Signal: fp=ATAGG pool=12
        True Signal: fp=GTAGA pool=8
        True Signal: fp=GTAGA pool=9
        True Signal: fp=TGTCT pool=0
        True Signal: fp=CAGTG pool=15
        True Signal: fp=GTAGC pool=14
        True Signal: fp=GTGCC pool=10
(I)
  20
        True Signal: fp=CAAAC pool=11
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C)
        True Signal: fp=GTAGG pool=3
        True Signal: fp=AAAAG pool=0
<u>ا</u>ط
True Signal: fp=AAAAG pool=2
        True Signal: fp=ACACG pool=5
  25
        True Signal: fp=GAAAG pool=14
        True Signal: fp=CCCGA pool=15
        True Signal: fp=AGCCC pool=10
        True Signal: fp=AGAGA pool=13
        True Signal: fp=ATGCT pool=6
  30
        True Signal: fp=AGAGC pool=14
        True Signal: fp=GCTTA pool=9
        True Signal: fp=AGGCC pool=12
        True Signal: fp=CGGCA pool=10
        True Signal: fp=GCCGA pool=7
  35
        True Signal: fp=CCTTG pool=2
        True Signal: fp=GCTTC pool=5
        True Signal: fp=TTCGC pool=10
        True Signal: fp=GCACG pool=10
        True Signal: fp=TTGGC pool=12
  40
        True Signal: fp=GTGCT pool=9
        True Signal: fp=ACGGG pool=11
        True Signal: fp=ACGGG pool=3
        True Signal: fp=GCGGC pool=11
        True Signal: fp=TAGAA pool=15
  45
        True Signal: fp=CCACT pool=13
        True Signal: fp=GGGCG pool=2
        True Signal: fp=TCAGA pool=9
        True Signal: fp=CGTAA pool=6
```

True Signal: fp=TGAAT pool=10

```
True Signal: fp=TAGAC pool=11
       True Signal: fp=CTTAT pool=13
       True Signal: fp=AGCCT pool=0
       True Signal: fp=CGTAC pool=7
       True Signal: fp=CATCG pool=7
  5
       True Signal: fp=TCGCA pool=7
       True Signal: fp=TCCCG pool=11
       True Signal: fp=AGTAG pool=9
       True Signal: fp=AGGCT pool=10
       True Signal: fp=GGCCT pool=8
  10
       True Signal: fp=TCGCG pool=5
       True Signal: fp=GGTAG pool=10
True Signal: fp=GGTAG pool=3
True Signal: fp=GGGCT pool=8
       True Signal: fp=TGGGG pool=1
       True Signal: fp=AGTAT pool=0
       True Signal: fp=ATGTC pool=9
       True Signal: fp=TGACT pool=9
CU.
       True Signal: fp=CTGTC pool=11
       True Signal: fp=GTCTC pool=4
  20
       True Signal: fp=CTGTG pool=3
True Signal: fp=CTAAA pool=14
j.
       True Signal: fp=ACATC pool=13
True Signal: fp=GTAAA pool=13
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C)
       True Signal: fp=ATAAG pool=13
  25
       True Signal: fp=AGCTA pool=4
True Signal: fp=GTCTT pool=13
        True Signal: fp=AGCTG pool=3
        True Signal: fp=AGGTC pool=1
        True Signal: fp=CGCTG pool=12
  30
        True Signal: fp=GGCTC pool=14
        True Signal: fp=AGGTG pool=8
        True Signal: fp=GGGTA pool=10
        True Signal: fp=GGGTA pool=15
        True Signal: fp=GGCTG pool=2
  35
        True Signal: fp=GGGTC pool=10
        True Signal: fp=CGAAA pool=3
        True Signal: fp=ATTCA pool=13
        True Signal: fp=ATTCA pool=6
        True Signal: fp=TTCAA pool=9
  40
        True Signal: fp=TTCAA pool=12
        True Signal: fp=AACGA pool=11
        True Signal: fp=ACGAA pool=13
        True Signal: fp=ATTCC pool=2
        True Signal: fp=CCGAA pool=12
  45
        True Signal: fp=CCGAA pool=14
        True Signal: fp=CATTC pool=13
        True Signal: fp=CCATT pool=11
```

```
True Signal: fp=GGGTG pool=6
       True Signal: fp=AGAAG pool=0
       True Signal: fp=CCCAG pool=3
       True Signal: fp=CCCAG pool=5
       True Signal: fp=CACGC pool=10
  5
       True Signal: fp=CTTCC pool=14
       True Signal: fp=CTTCC pool=6
       True Signal: fp=TTATT pool=0
       True Signal: fp=GATTC pool=12
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       True Signal: fp=GATTC pool=14
       True Signal: fp=CAGGA pool=15
       True Signal: fp=GCATT pool=15
True Signal: fp=AGCTT pool=4
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       True Signal: fp=ATTCG pool=9
       True Signal: fp=ATTCG pool=5
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       True Signal: fp=CGAAG pool=14
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       True Signal: fp=CACGG pool=9
True Signal: fp=AAGGG pool=13
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       True Signal: fp=GAGGC pool=11
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       True Signal: fp=GGCTT pool=11
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       True Signal: fp=AAACT pool=4
<u>|</u>__
       True Signal: fp=TCAAA pool=4
True Signal: fp=TCAAC pool=5
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       True Signal: fp=CAACT pool=4
C25
       True Signal: fp=AGAAT pool=10
       True Signal: fp=AATTT pool=8
       True Signal: fp=TACCC pool=5
       True Signal: fp=ACGAT pool=1
       True Signal: fp=CGAAT pool=12
 30
       True Signal: fp=TAAGG pool=1
       True Signal: fp=AAGGT pool=9
       True Signal: fp=AAGGT pool=12
       True Signal: fp=GCTGA pool=12
       True Signal: fp=TGCAG pool=5
 35
       True Signal: fp=TAGCG pool=5
       True Signal: fp=GCGAT pool=14
       True Signal: fp=GCTGC pool=10
       True Signal: fp=GCTGG pool=1
       True Signal: fp=GGTCG pool=0
 40
       True Signal: fp=TCAAT pool=4
       True Signal: fp=TAAGT pool=2
       True Signal: fp=CCTGT pool=5
       True Signal: fp=TCTCG pool=12
       True Signal: fp=TGTGA pool=9
 45
       True Signal: fp=GCTGT pool=2
       True Signal: fp=GGTCT pool=13
       True Signal: fp=CAATA pool=7
       True Signal: fp=GAATA pool=0
```

```
True Signal: fp=GAATA pool=15
        True Signal: fp=ATTTA pool=1
        True Signal: fp=ATTTA pool=12
        False positive Signal: fp=AAACT pool=2
   5
        False positive Signal: fp=CCAGG pool=0
        False positive Signal: fp=TAGTA pool=4
        False positive Signal: fp=TCCCT pool=13
        False positive Signal: fp=CTGTG pool=7
        False positive Signal: fp=GCGTA pool=13
  10
        False positive Signal: fp=TCTAG pool=0
        False positive Signal: fp=ACCTA pool=0
        False positive Signal: fp=CACTT pool=10
山沙卡小山岛山岛 20
        False positive Signal: fp=GGAAG pool=12
        False positive Signal: fp=CCGAC pool=3
        False positive Signal: fp=TAGGG pool=12
        False positive Signal: fp=TAGCG pool=4
        False positive Signal: fp=TCTCC pool=15
        False positive Signal: fp=CAGAA pool=9
        False positive Signal: fp=TGCGC pool=9
        False positive Signal: fp=CGAAT pool=2
False positive Signal: fp=CCGAG pool=9
        False positive Signal: fp=CATGC pool=4
        False positive Signal: fp=GTATC pool=1
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口
        False positive Signal: fp=TCGCT pool=2
        False positive Signal: fp=AGGTA pool=14
        False positive Signal: fp=AACCC pool=13
       False positive Signal: fp=TACCC pool=6
        False positive Signal: fp=GTTAA pool=8
        False positive Signal: fp=TGGAG pool=12
  30
        False positive Signal: fp=ATTCC pool=9
        False positive Signal: fp=TCACA pool=15
       False positive Signal: fp=CTGCT pool=3
       False positive Signal: fp=TGCCG pool=2
       False positive Signal: fp=ACTCG pool=4
 35
       False positive Signal: fp=CGCAC pool=14
       False positive Signal: fp=CTTCG pool=15
       False positive Signal: fp=CCTGG pool=0
       False positive Signal: fp=AGAAG pool=2
       False positive Signal: fp=CTTAA pool=3
 40
       False positive Signal: fp=ACGGT pool=9
       False positive Signal: fp=CTTGG pool=3
       False positive Signal: fp=AGATC pool=12
       False positive Signal: fp=GACCG pool=5
       False positive Signal: fp=CCGTT pool=8
 45
       False positive Signal: fp=CACTC pool=12
       False positive Signal: fp=ATTGG pool=5
       False positive Signal: fp=AACAC pool=14
       False positive Signal: fp=GTACC pool=14
```

A 67 - CA1 - 206444.1

```
False positive Signal: fp=CCCGT pool=4
       False positive Signal: fp=AGTGG pool=6
       False positive Signal: fp=AGGTC pool=9
       False positive Signal: fp=GAACC pool=1
       False positive Signal: fp=GATTC pool=12
  5
       False positive Signal: fp=AAGCT pool=1
       False positive Signal: fp=GCACC pool=7
       False positive Signal: fp=GCCCT pool=5
       False positive Signal: fp=GCTGC pool=0
       False positive Signal: fp=GACAA pool=7
  10
       False positive Signal: fp=TCGCT pool=0
       False positive Signal: fp=CGTAA pool=2
口
       False positive Signal: fp=CGAGT pool=3
False positive Signal: fp=AATGC pool=7
  15
       False positive Signal: fp=AAACT pool=5
       False positive Signal: fp=CGATG pool=7
ű
       False positive Signal: fp=ATCCA pool=14
đ١
       False positive Signal: fp=GGTCG pool=1
False positive Signal: fp=ACCGC pool=2
Œ1
       False positive Signal: fp=TATCA pool=0
 20
₽
False positive Signal: fp=AATCC pool=4
       False positive Signal: fp=GAGGA pool=14
.
Ci
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       False positive Signal: fp=TATAC pool=5
       False positive Signal: fp=TCGCG pool=2
       False positive Signal: fp=GAGGG pool=5
₫ 25
       False positive Signal: fp=ATTGA pool=5
       False positive Signal: fp=TCAGA pool=15
       False positive Signal: fp=CGGCC pool=1
       False positive Signal: fp=TCGCT pool=7
 30
       False positive Signal: fp=TCTCA pool=10
       False positive Signal: fp=TCTGT pool=11
       False positive Signal: fp=GTGGT pool=4
       False positive Signal: fp=CTTCC pool=5
       False positive Signal: fp=GACAA pool=14
 35
       False positive Signal: fp=CTGCC pool=5
       False positive Signal: fp=CAACT pool=6
       False positive Signal: fp=CGAAG pool=13
       False positive Signal: fp=TCGCA pool=15
       False positive Signal: fp=CTTGT pool=13
       False positive Signal: fp=GGTCC pool=13
 40
       False positive Signal: fp=ATGTT pool=14
       False positive Signal: fp=CGGCG pool=3
       False positive Signal: fp=CGAGC pool=2
       False positive Signal: fp=AAGCA pool=14
       False positive Signal: fp=CAAGG pool=9
 45
       False positive Signal: fp=TGGCT pool=15
       False positive Signal: fp=AGGAT pool=8
       False positive Signal: fp=ACGGG pool=9
```

```
False positive Signal: fp=AGATG pool=15
      False positive Signal: fp≈CCCAA pool=0
      False positive Signal: fp=ACTTC pool=1
      False positive Signal: fp=TCCTT pool=15
 5
      False positive Signal: fp=CCAGG pool=6
      False positive Signal: fp=TGCGT pool=4
      False positive Signal: fp=CTACT pool=4
      False positive Signal: fp=AATTG pool=3
      False positive Signal: fp=GGAGC pool=6
10
      False positive Signal: fp=AACAG pool=9
      False positive Signal: fp=GGATT pool=12
      False positive Signal: fp=ATGAA pool=8
      False positive Signal: fp=AGGTT pool=11
      False positive Signal: fp=GCCTT pool=2
15
      False positive Signal: fp=TGCCG pool=12
      False positive Signal: fp=ACTCC pool=13
      False positive Signal: fp=ACCAG pool=13
      False positive Signal: fp=CTCTG pool=4
      False positive Signal: fp=CAGTT pool=15
20
      False positive Signal: fp=CTAAG pool=10
      False positive Signal: fp=ATCGG pool=0
      False positive Signal: fp=CCGTC pool=5
      False positive Signal: fp=TGCTC pool=4
      False positive Signal: fp=ATCTG pool=4
25
      False positive Signal: fp=GGCGT pool=6
      False positive Signal: fp=TACCA pool=9
      False positive Signal: fp=GTGGG pool=6
      False positive Signal: fp=ACGTA pool=12
      False positive Signal: fp=ACGTG pool=9
30
      False positive Signal: fp=CTGTA pool=11
      False positive Signal: fp=GCAGA pool=12
      False positive Signal: fp=GCCGC pool=9
     False positive Signal: fp=ATCAG pool=14
     False positive Signal: fp=AAAAG pool=0
35
     False positive Signal: fp=GTGGG pool=10
     False positive Signal: fp=AACCA pool=5
     False positive Signal: fp=GGACG pool=7
     False positive Signal: fp=GCCGG pool=6
     False positive Signal: fp=GCGAC pool=11
40
     False positive Signal: fp=GCCAC pool=3
     False positive Signal: fp=AGGCC pool=4
     False positive Signal: fp=ACGCA pool=15
     False positive Signal: fp=ACTGA pool=15
     False positive Signal: fp=AATTC pool=10
45
     False positive Signal: fp=GCAAC pool=0
     False positive Signal: fp=GTTTA pool=7
     False positive Signal: fp=AGCAA pool=2
     False positive Signal: fp=GCAAC pool=7
```

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A 69 -

```
False positive Signal: fp=CGAAA pool=14
        False positive Signal: fp=GTGCA pool=4
        False positive Signal: fp=GCTGT pool=5
        False positive Signal: fp=AATGA pool=15
   5
        False positive Signal: fp=GATGA pool=4
        False positive Signal: fp=GTAAG pool=2
        False positive Signal: fp=GTCGG pool=1
        False positive Signal: fp=TATAC pool=1
        False positive Signal: fp=AAAGT pool=2
   10
        False positive Signal: fp=AGCGC pool=13
        False positive Signal: fp=GTTCT pool=13
        False positive Signal: fp=GGGCG pool=3
        False positive Signal: fp=AAAAT pool=7
        False positive Signal: fp=GTAGG pool=1
  15
        False positive Signal: fp=AAGAT pool=14
        False positive Signal: fp=CATGC pool=3
False positive Signal: fp=CGGTG pool=7
False positive Signal: fp=AGAGT pool=9
        False positive Signal: fp=GGATT pool=5
  20
        False positive Signal: fp=ATTAT pool=12
        False positive Signal: fp=TGTGA pool=0
        False positive Signal: fp=CTGAT pool=15
        False positive Signal: fp=TGGTC pool=13
        False positive Signal: fp=GTTTA pool=2
r
Ci
Li
  25
        False positive Signal: fp=AAATC pool=1
        False positive Signal: fp=TAGTA pool=3
        False positive Signal: fp=AAACA pool=9
False positive Signal: fp=GTCGT pool=10
        False positive Signal: fp=TCGTC pool=4
  30
        False positive Signal: fp=AAACT pool=10
        False positive Signal: fp=AGCCT pool=5
        False positive Signal: fp=CAGTC pool=9
        False positive Signal: fp=AGATC pool=1
        False positive Signal: fp=CTCTG pool=3
  35
        False positive Signal: fp=TGTCC pool=9
        False positive Signal: fp=CTGCT pool=15
        False positive Signal: fp=GGTAG pool=14
        False positive Signal: fp=CTCTT pool=11
        False positive Signal: fp=CCCTT pool=2
  40
        False positive Signal: fp=GAATA pool=14
        False positive Signal: fp=TAACC pool=0
        False positive Signal: fp=GCTAT pool=8
        False positive Signal: fp=TACTG pool=2
        False positive Signal: fp=ATGTT pool=3
  45
        False positive Signal: fp=GACGA pool=12
        False positive Signal: fp=ACAAC pool=14
        False positive Signal: fp=TCGAC pool=2
        False positive Signal: fp=ATGGA pool=9
```

A.70 -

```
False positive Signal: fp=CAGTT pool=1
         False positive Signal: fp=GGGCT pool=12
         False positive Signal: fp=ACCGG pool=1
         False positive Signal: fp=TGCGA pool=12
    5
         False positive Signal: fp=GGGTG pool=1
         False positive Signal: fp=TGTCA pool=1
         False positive Signal: fp=GCCCT pool=5
         False positive Signal: fp=CGCTG pool=10
         False positive Signal: fp=GCATG pool=11
   10
         False positive Signal: fp=TGGCT pool=12
         False positive Signal: fp=CGGAG pool=13
         False positive Signal: fp=CTCCG pool=3
         False positive Signal: fp=CGAAA pool=0
         False positive Signal: fp=ACTGG pool=2
   15
         False positive Signal: fp=ATCTT pool=6
         False positive Signal: fp=AACCT pool=1
False positive Signal: fp=GGACG pool=10
False positive Signal: fp=CGATA pool=11
         False positive Signal: fp=ATATA pool=7
   20
         False positive Signal: fp=TCGGT pool=10
         False positive Signal: fp=TACCT pool=9
        False positive Signal: fp=TCAAG pool=1
        False positive Signal: fp=GTCGT pool=0
        False positive Signal: fp=TATCA pool=1
  25
        False positive Signal: fp=GCTAC pool=10
        False positive Signal: fp=GTCTT pool=11
        False positive Signal: fp=GTATC pool=5
False positive Signal: fp=TCGCC pool=1
        False positive Signal: fp=GTTTA pool=14
  30
        False positive Signal: fp=GCATT pool=6
        False positive Signal: fp=TATAG pool=5
        False positive Signal: fp=TCACC pool=5
        False positive Signal: fp=TCGCA pool=11
        False positive Signal: fp=AACCC pool=15
  35
        False positive Signal: fp=TATGC pool=6
        False positive Signal: fp=TGGAT pool=0
        False positive Signal: fp=TATCC pool=4
        False positive Signal: fp=TCAGG pool=8
        False positive Signal: fp=CACAA pool=4
  40
        False positive Signal: fp=TGCCC pool=11
        False positive Signal: fp=GTTCT pool=5
        False positive Signal: fp=TACAT pool=8
        False positive Signal: fp=TGTTT pool=9
        False positive Signal: fp=ACATT pool=7
  45
        False positive Signal: fp=AAGCT pool=1
        False positive Signal: fp=CGGAC pool=2
        False positive Signal: fp=AGAAT pool=13
        False positive Signal: fp=AGGCG pool=6
```

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CA1 - 206444.1

```
False positive Signal: fp=GCTGT pool=1
        False positive Signal: fp=GGGGT pool=1
        False positive Signal: fp=TGGTG pool=2
        False positive Signal: fp=TCGAT pool=9
   5
        False positive Signal: fp=GATCA pool=13
        False positive Signal: fp=CCGGT pool=10
        False positive Signal: fp=ATTGT pool=8
        False positive Signal: fp=ATCAC pool=5
        False positive Signal: fp=GGAAG pool=15
   10
        False positive Signal: fp=GACTA pool=0
        False positive Signal: fp=TCTAT pool=0
        False positive Signal: fp=AAGCT pool=15
        False positive Signal: fp=ATTTA pool=5
        False positive Signal: fp=GTTAA pool=7
   15
        False positive Signal: fp=ATAAT pool=12
        False positive Signal: fp=AAGTC pool=9
        False positive Signal: fp=GCCTA pool=9
False positive Signal: fp=AGCCA pool=4
False positive Signal: fp=AACGC pool=3
  20
        False positive Signal: fp=GGTAA pool=15
        False positive Signal: fp=TACTA pool=11
41
        False positive Signal: fp=GAGCC pool=6
Œ١
        False positive Signal: fp=AGAAT pool=6
False positive Signal: fp=AATTG pool=12
  25
        False positive Signal: fp=TGCCC pool=11
ء
(1)
        False positive Signal: fp=AGTAA pool=12
        False positive Signal: fp=GTAGC pool=4
j= è
        False positive Signal: fp=TCGAG pool=4
False positive Signal: fp=TGCAG pool=0
  30
        False positive Signal: fp=GAGTA pool=1
        False positive Signal: fp=GTACC pool=11
False positive Signal: fp=TCCTG pool=5
        False positive Signal: fp=CCTGA pool=10
        False positive Signal: fp=GTATG pool=1
  35
        False positive Signal: fp=ACAGA pool=7
        False positive Signal: fp=GCGTC pool=15
        False positive Signal: fp=ATCGA pool=4
        False positive Signal: fp=ATCCT pool=5
        False positive Signal: fp=TCGTG pool=0
  40
        False positive Signal: fp=TCTCT pool=15
        False positive Signal: fp=AGCAA pool=8
        False positive Signal: fp=GCGCT pool=10
        False positive Signal: fp=ACTTC pool=5
        False positive Signal: fp=TCCAG pool=3
  45
        False positive Signal: fp=ACGCG pool=7
        False positive Signal: fp=GAGCA pool=5
        False positive Signal: fp=TCAAC pool=4
        False positive Signal: fp=CCTTG pool=1
```

A 72 -

```
False positive Signal: fp=CTGAA pool=0
        False positive Signal: fp=CTGGC pool=0
        False positive Signal: fp=ACCTG pool=6
        False positive Signal: fp=GATAC pool=13
   5
        False positive Signal: fp=TAGTG pool=7
        False positive Signal: fp=TCGAC pool=13
        False positive Signal: fp=ATTGA pool=15
        False positive Signal: fp=TGTCG pool=2
        False positive Signal: fp=CGTGC pool=6
  10
        False positive Signal: fp=CAGTG pool=10
        False positive Signal: fp=GAGTC pool=11
        False positive Signal: fp=AAGTT pool=11
15 15 TO CE
        False positive Signal: fp=AGAGA pool=2
        False positive Signal: fp=ATATA pool=8
        10mers:37056
        11mers:6330
        12mers:1360
        13mers:536
20
        14mers: 412
E)
        15mers:395
        16mers:390
17mers:382
        18mers: 379
  25
        19mers: 376
        20mers:372
21mers:372
        22mers:377
        23mers:371
  30
        24mers:369
        25mers:367
        26mers:363
        27mers:365
        28mers: 371
  35
        29mers:366
        30mers:359
        31mers:360
        32mers:356
        33mers:358
  40
        34mers:359
        35mers:359
        36mers:352
        37mers:346
        38mers:343
  45
        39mers:340
        40mers:342
        41mers:344
        42mers:343
```

False positive Signal: fp=GAGAT pool=11

```
44mers:335
         45mers:333
         46mers:334
   5
        47mers:335
         48mers:334
         49mers:333
         50mers:325
         51mers:323
  10
         52mers:321
         53mers:322
         54mers:324
日
15
15
15
         55mers:323
         56mers:319
         57mers:319
         58mers:319
         59mers:318
         60mers:319
0
0 20
0
0
0
0
0
0
0
0
         61mers:315
         62mers:315
         63mers:312
         64mers:309
         65mers:312
         66mers:312
         67mers:309
         68mers:308
         69mers:304
         70mers:302
         71mers:301
         72mers:297
  30
         73mers:297
         74mers:298
         75mers:295
         76mers:290
  35
         77mers:288
         78mers:290
         79mers:287
         80mers:284
         81mers:284
         82mers:284
  40
         83mers:285
         84mers:283
         85mers:284
         86mers:282
         87mers:278
  45
         88mers:276
         89mers:276
         90mers:278
```

43mers:337

```
92mers:277
        93mers:270
        94mers:270
   5
        95mers:269
        96mers:268
        97mers:270
        98mers:269
        99mers:267
  10
        100mers:265
        101mers:266
        102mers:265
        103mers:265
104mers:261
  15
        105mers:258
        106mers:258
        107mers:260
        108mers:254
        109mers:250
  20
        110mers:250
111mers:248
        112mers:246
        113mers:244
        114mers:245
  25
        115mers:247
        116mers:248
        117mers:245
        118mers:245
        119mers:241
  30
        120mers:239
        121mers:235
        122mers:234
        123mers:236
        124mers:235
        125mers:235
  35
        126mers:232
        127mers:230
        128mers:232
        129mers:232
  40
        130mers:226'
        131mers:224
        132mers:220
        133mers:221
        134mers:219
  45
        135mers:219
        136mers:220
        137mers:217
        138mers:213
```

91mers:282

```
139mers:213
        140mers:213
        141mers:211
        142mers:211
  5
        143mers:208
        144mers:211
        145mers:210
        146mers:207
        147mers:205
 10
        148mers:209
        149mers:208
        150mers:203
151mers:198
        152mers:196
        153mers:196
        154mers:194
        155mers:197
        156mers:194
        157mers:190
        158mers:188
        159mers:187
        160mers:186
        161mers:188
        162mers:187
        163mers:184
        164mers:184
        165mers:186
       166mers:184
       167mers:183
 30
       168mers:182
       169mers:178
       170mers:174
       171mers:174
       172mers:174
 35
       173mers:169
       174mers:168
       175mers:170
       176mers:170
       177mers:166
 40
       178mers:166
       179mers:164
       180mers:165
       181mers:167
       182mers:161
 45
       183mers:159
       184mers:159
       185mers:159
       186mers:155
```

```
187mers:156
        188mers:154
        189mers:151
        190mers:150
  5
        191mers:154
        192mers:152
        193mers:150
        194mers:150
        195mers:144
  10
        196mers:143
        197mers: 144
        198mers:140
199mers:141
        200mers:142
        201mers:137
        202mers:136
       203mers:136
       204mers:135
        205mers:134
        206mers:132
        207mers:129
        208mers:128
        209mers:124
        210mers:123
        211mers:123
        212mers:122
        213mers:122
       214mers:123
       215mers:121
 30
        216mers:119
        217mers:121
       218mers:121
       219mers:121
        220mers:120
 35
       221mers:115
       222mers:111
       223mers:112
       224mers:112
       225mers:109
 40
       226mers:111
       227mers:107
       228mers:104
       229mers:104
       230mers:103
 45
       231mers:101
       232mers:102
       233mers:99
       234mers:96
```

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```
235mers:94
        236mers:91
        237mers:92
        238mers:92
   5
        239mers:90
        240mers:85
        241mers:84
        242mers:82
        243mers:80
  10
        244mers:79
        245mers:80
        246mers:78
DS475608.GIO600
        247mers:77
        248mers:75
        249mers:74
        250mers:75
        251mers:74
        252mers:72
        253mers:71
  20
        254mers:74
        255mers:72
        256mers:68
        257mers:65
        258mers:66
        259mers:63
        260mers:62
        261mers:61
        262mers:59
        263mers:58
  30
        264mers:57
        265mers:59
        266mers:60
        267mers:60
        268mers:56
  35
        269mers:52
        270mers:50
        271mers:51
        272mers:48
        273mers:48
  40
        274mers:49
        275mers:43
        276mers:40
        277mers:41
        278mers:40
  45
        279mers:39
        280mers:38
        281mers:32
        282mers:29
```

```
283mers:29
        284mers:29
        285mers:27
        286mers:26
   5
        287mers:23
        288mers:19
        289mers:17
        290mers:17
        291mers:15
  10
        292mers:13
        293mers:12
        294mers:9
295mers:7
        296mers:6
        297mers:5
        298mers:4
        299mers:3
300mers:1
  20
        GTAGGGGTAG ACATCGCGTA AAAGGGGCGT ACCCAGGACC CCCCTTGGCT CAATAAGTAG
        CGCTGGGGTG CTACTACGGG TCTCGACACG CATTCAACTA AAAGCTTCCA TTCGCACGGG
        CTTATTTAAC GAAGGTCGCG ATAAGGTGCC GAATAGGCTG CAGAGCGGCA GCCTGTCCAG
TGAATGCTGT GAGGCCTCCA GCTGACTCAT GAGAGAAGCC CAGTATTCAA ACTACGATTC
        CACTCGACAA TTTAGGATGT CTTCCCGAAA GCTATCGGGT AGAATATCAG ATTCGTTTAA
  25
```

Solutions: 1

True solution DotsOn=286

## r300.100.15.out

Using pool D16 Using sequence r300 5 True Signal: fp=CTCGA pool=7 True Signal: fp=CTACG pool=1 True Signal: fp=CTACG pool=2 True Signal: fp=GTACC pool=0 True Signal: fp=ATCGC pool=1 10 True Signal: fp=GAATG pool=15 True Signal: fp=ATCGG pool=13 다 4 15 True Signal: fp=GTCGC pool=13 True Signal: fp=ACCCA pool=14 True Signal: fp=CTGGG pool=10 True Signal: fp=CAATT pool=3 True Signal: fp=GACAA pool=1 True Signal: fp=TACTA pool=3 True Signal: fp=ACCCC pool=6 True Signal: fp=AGACA pool=10 20 True Signal: fp=TTCCA pool=8 C) C) C) C) C) C) True Signal: fp=TTCCA pool=4 True Signal: fp=ACGCA pool=8 True Signal: fp=GACAC pool=2 True Signal: fp=CGACA pool=10 True Signal: fp=CGACA pool=11 True Signal: fp=CTACT pool=10 True Signal: fp=CCCCC pool=9 True Signal: fp=CCCCC pool=14 30 True Signal: fp=TTCCC pool=12 True Signal: fp=GCCCA pool=1 True Signal: fp=GAGAA pool=8 True Signal: fp=CCAGC pool=5 True Signal: fp=CAGAG pool=3 35 True Signal: fp=GCAGA pool=1 True Signal: fp=GCAGC pool=12 True Signal: fp=CGCGA pool=3 True Signal: fp=AGCGC pool=0 True Signal: fp=GGACC pool=1 40 True Signal: fp=CCAGG pool=7 True Signal: fp=TTAGG pool=1 True Signal: fp=GAGAG pool=1 True Signal: fp=TAAAA pool=11 True Signal: fp=AGCGG pool=4 45 True Signal: fp=ACTAA pool=15 True Signal: fp=CGGGC pool=4 True Signal: fp=ACTAC pool=4

True Signal: fp=ACTAC pool=7

```
True Signal: fp=AGGGG pool=5
       True Signal: fp=TTTAA pool=15
       True Signal: fp=GGGGC pool=7
  5
       True Signal: fp=CAGAT pool=11
       True Signal: fp=CATGA pool=14
       True Signal: fp=AATGC pool=1
       True Signal: fp=CCCCT pool=13
       True Signal: fp=GACAT pool=4
  10
       True Signal: fp=TCTTC pool=8
       True Signal: fp=CCAGT pool=10
       True Signal: fp=CCAGT pool=9
True Signal: fp=GCTAC pool=9
Ţ]
       True Signal: fp=TTTAG pool=11
15
       True Signal: fp=TGAGA pool=12
       True Signal: fp=TGCCG pool=8
T
       True Signal: fp=GCGCT pool=15
       True Signal: fp=CGCGT pool=4
True Signal: fp=TGAGG pool=7
صًّا
20
       True Signal: fp=TCGGG pool=1
       True Signal: fp=CGGGT pool=8
C)
       True Signal: fp=CGGGT pool=12
True Signal: fp=GGCGT pool=12
       True Signal: fp=TATCA pool=4
True Signal: fp=ATATC pool=2
       True Signal: fp=CTATC pool=6
True Signal: fp=GGGGT pool=11
       True Signal: fp=GGGGT pool=14
       True Signal: fp=TATCG pool=3
 30
       True Signal: fp=GCTAT pool=3
       True Signal: fp=GATGT pool=0
       True Signal: fp=TGGCT pool≈6
       True Signal: fp=CTCAA pool=15
       True Signal: fp=ATCAG pool=6
 35
       True Signal: fp=CGATA pool=8
       True Signal: fp=CTGAC pool=5
       True Signal: fp=GTATT pool=11
       True Signal: fp=ATGAG pool=8
       True Signal: fp=GCCTC pool=0
 40
       True Signal: fp=GTGAA pool=2
       True Signal: fp=GCGTA pool=0
       True Signal: fp=GCGTA pool=9
       True Signal: fp=GCCTG pool=12
       True Signal: fp=GGATG pool=1
 45
       True Signal: fp=GTGAG pool=0
       True Signal: fp=TTAAC pool=2
       True Signal: fp=AAAGC pool=1
       True Signal: fp=AAAGC pool=6
```

True Signal: fp=AGGGG pool=9

```
True Signal: fp=AAGCC pool=8
       True Signal: fp=CTCAT pool=8
       True Signal: fp=AGATT pool=12
       True Signal: fp=CAGCC pool=10
       True Signal: fp=CGCAC pool=4
  5
       True Signal: fp=AAAGG pool=1
       True Signal: fp=GACCC pool=9
       True Signal: fp=CCCTT pool=1
       True Signal: fp=CGATT pool=11
       True Signal: fp=GAAGC pool=5
 10
       True Signal: fp=TCATG pool=1
       True Signal: fp=AGGAC pool=15
C)
了
丰
15
       True Signal: fp=TGCTA pool=4
       True Signal: fp=GAAGG pool=10
       True Signal: fp=AATAA pool=2
Ľ1
       True Signal: fp=TGCTG pool=9
       True Signal: fp=GGCAG pool=1
۵ì
True Signal: fp=GAGCG pool=3
       True Signal: fp=CTTGG pool=1
<sub>E</sub> 20
       True Signal: fp=ACAAT pool=6
True Signal: fp=ACTCA pool=7
--
       True Signal: fp=TCCAC pool=10
C)
       True Signal: fp=AATAG pool=13
۵ì
       True Signal: fp=GATAA pool=1
25
       True Signal: fp=TACGA pool=6
       True Signal: fp=TATTC pool=2
       True Signal: fp=CCTCC pool=3
       True Signal: fp=TAACG pool=14
       True Signal: fp=AAGCT pool=12
 30
       True Signal: fp=AAGCT pool=5
       True Signal: fp=ACTCG pool=15
       True Signal: fp=CAGCT pool=9
       True Signal: fp=TCCAG pool=8
       True Signal: fp=TCCAG pool=2
 35
       True Signal: fp=CGCAT pool=11
       True Signal: fp=TCGAC pool=9
       True Signal: fp=TCGAC pool=13
       True Signal: fp=GCTCA pool=5
       True Signal: fp=AGGAT pool=8
 40
       True Signal: fp=TAGGA pool=15
       True Signal: fp=AGTGA pool=14
       True Signal: fp=TAGGC pool=13
       True Signal: fp=TACGG pool=7
       True Signal: fp=TAGGG pool=13
 45
       True Signal: fp=AATAT pool=13
       True Signal: fp=GGTGC pool=1
       True Signal: fp=GGTGC pool=4
       True Signal: fp=TCCAT pool=9
```

```
True Signal: fp=TGAAT pool=10
        True Signal: fp=TATTT pool=6
        True Signal: fp=TGTCC pool=10
        True Signal: fp=AACTA pool=11
   5
        True Signal: fp=AACTA pool=3
        True Signal: fp=CACTC pool=7
        True Signal: fp=CTCCA pool=6
        True Signal: fp=AAGTA pool=7
        True Signal: fp=CAGTA pool=8
  10
        True Signal: fp=GACTC pool=14
        True Signal: fp=GTCCA pool=3
        True Signal: fp=CTGCA pool=11
True Signal: fp=ATAGG pool=12
        True Signal: fp=GTAGA pool=8
        True Signal: fp=GTAGA pool=9
  15
True Signal: fp=TGTCT pool=0
        True Signal: fp=CAGTG pool=15
        True Signal: fp=GTAGC pool=14
        True Signal: fp=GTGCC pool=10
Œ)
        True Signal: fp=CAAAC pool=11
  20
C)
        True Signal: fp=GTAGG pool=3
True Signal: fp=AAAAG pool=0
        True Signal: fp=AAAAG pool=2
        True Signal: fp=ACACG pool=5
True Signal: fp=GAAAG pool=14
        True Signal: fp=CCCGA pool=15
        True Signal: fp=AGCCC pool=10
        True Signal: fp=AGAGA pool=13
        True Signal: fp=ATGCT pool=6
        True Signal: fp=AGAGC pool=14
  30
        True Signal: fp=GCTTA pool=9
        True Signal: fp=AGGCC pool=12
        True Signal: fp=CGGCA pool=10
        True Signal: fp=GCCGA pool=7
        True Signal: fp=CCTTG pool=2
  35
        True Signal: fp=GCTTC pool=5
        True Signal: fp=TTCGC pool=10
        True Signal: fp=GCACG pool=10
        True Signal: fp=TTGGC pool=12
  40
        True Signal: fp=GTGCT pool=9
        True Signal: fp=ACGGG pool=11
        True Signal: fp=ACGGG pool=3
        True Signal: fp=GCGGC pool=11
        True Signal: fp=TAGAA pool=15
       True Signal: fp=CCACT pool=13
  45
        True Signal: fp=GGGCG pool=2
        True Signal: fp=TCAGA pool=9
        True Signal: fp=CGTAA pool=6
```

```
True Signal: fp=TAGAC pool=11
       True Signal: fp=CTTAT pool=13
       True Signal: fp=AGCCT pool=0
       True Signal: fp=CGTAC pool=7
  5
       True Signal: fp=CATCG pool=7
       True Signal: fp=TCGCA pool=7
       True Signal: fp=TCCCG pool=11
       True Signal: fp=AGTAG pool=9
       True Signal: fp=AGGCT pool=10
       True Signal: fp=GGCCT pool=8
  10
       True Signal: fp=TCGCG pool=5
        True Signal: fp=GGTAG pool=10
True Signal: fp=GGTAG pool=3
       True Signal: fp=GGGCT pool=8
       True Signal: fp=TGGGG pool=1
        True Signal: fp=AGTAT pool=0
T)
       True Signal: fp=ATGTC pool=9
Œ١
        True Signal: fp=TGACT pool=9
True Signal: fp=CTGTC pool=11
ũ١
        True Signal: fp=GTCTC pool=4
  20
E
C)
        True Signal: fp=CTGTG pool=3
        True Signal: fp=CTAAA pool=14
<u>ļ</u>
        True Signal: fp=ACATC pool=13
.
Ci
        True Signal: fp=GTAAA pool=13
        True Signal: fp=ATAAG pool=13
[] 25
        True Signal: fp=AGCTA pool=4
        True Signal: fp=GTCTT pool=13
        True Signal: fp=AGCTG pool=3
        True Signal: fp=AGGTC pool=1
  30
        True Signal: fp=CGCTG pool=12
        True Signal: fp=GGCTC pool=14
        True Signal: fp=AGGTG pool=8
        True Signal: fp=GGGTA pool=10
        True Signal: fp=GGGTA pool=15
  35
        True Signal: fp=GGCTG pool=2
        True Signal: fp=GGGTC pool=10
        True Signal: fp=CGAAA pool=3
        True Signal: fp=ATTCA pool=13
        True Signal: fp=ATTCA pool=6
        True Signal: fp=TTCAA pool=9
  40
        True Signal: fp=TTCAA pool=12
        True Signal: fp=AACGA pool=11
        True Signal: fp=ACGAA pool=13
        True Signal: fp=ATTCC pool=2
        True Signal: fp=CCGAA pool=12
  45
        True Signal: fp=CCGAA pool=14
        True Signal: fp=CATTC pool=13
        True Signal: fp=CCATT pool=11
```

**A** 84 -

```
True Signal: fp=GGGTG pool=6
       True Signal: fp=AGAAG pool=0
       True Signal: fp=CCCAG pool=3
       True Signal: fp=CCCAG pool=5
       True Signal: fp=CACGC pool=10
  5
       True Signal: fp=CTTCC pool=14
       True Signal: fp=CTTCC pool=6
       True Signal: fp=TTATT pool=0
       True Signal: fp=GATTC pool=12
       True Signal: fp=GATTC pool=14
  10
       True Signal: fp=CAGGA pool=15
       True Signal: fp=GCATT pool=15
C)
       True Signal: fp=AGCTT pool=4
Ľ)
       True Signal: fp=ATTCG pool=9
True Signal: fp=ATTCG pool=5
 15
       True Signal: fp=CGAAG pool=14
       True Signal: fp=CACGG pool=9
True Signal: fp=AAGGG pool=13
       True Signal: fp=GAGGC pool=11
ũ)
       True Signal: fp=GGCTT pool=11
 20
Œ
       True Signal: fp=AAACT pool=4
C)
       True Signal: fp=TCAAA pool=4
<u>|--</u>1
       True Signal: fp=TCAAC pool=5
True Signal: fp=CAACT pool=4
۵۱
       True Signal: fp=AGAAT pool=10
5 25
       True Signal: fp=AATTT pool=8
       True Signal: fp=TACCC pool=5
       True Signal: fp=ACGAT pool=1
       True Signal: fp=CGAAT pool=12
       True Signal: fp=TAAGG pool=1
  30
       True Signal: fp=AAGGT pool=9
       True Signal: fp=AAGGT pool=12
       True Signal: fp=GCTGA pool=12
       True Signal: fp=TGCAG pool=5
  35
       True Signal: fp=TAGCG pool=5
       True Signal: fp=GCGAT pool=14
       True Signal: fp=GCTGC pool=10
       True Signal: fp=GCTGG pool=1
       True Signal: fp=GGTCG pool=0
  40
       True Signal: fp=TCAAT pool=4
       True Signal: fp=TAAGT pool=2
       True Signal: fp=CCTGT pool=5
       True Signal: fp=TCTCG pool=12
       True Signal: fp=TGTGA pool=9
  45
       True Signal: fp=GCTGT pool=2
       True Signal: fp=GGTCT pool=13
       True Signal: fp=CAATA pool=7
       True Signal: fp=GAATA pool=0
```

A 85 -

```
True Signal: fp=GAATA pool=15
       True Signal: fp=ATTTA pool=1
       True Signal: fp=ATTTA pool=12
       False positive Signal: fp=CAATT pool=6
       False positive Signal: fp=AGAGT pool=4
  5
       False positive Signal: fp=TGCAC pool=15
       False positive Signal: fp=CATCA pool=9
       False positive Signal: fp=ACACG pool=1
       False positive Signal: fp=GTTTG pool=5
       False positive Signal: fp=CAGGT pool=12
  10
       False positive Signal: fp=TCACT pool=2
       False positive Signal: fp=GGCAA pool=13
False positive Signal: fp=GCCTA pool=2
J. J. J. H. 16. 1
       False positive Signal: fp=AGGAG pool=11
       False positive Signal: fp=GGCCG pool=8
       False positive Signal: fp=CTCGA pool=8
False positive Signal: fp=GGAGG pool=10
       False positive Signal: fp=GACCT pool=7
C)
       False positive Signal: fp=CAGAG pool=14
đ
 20
       False positive Signal: fp=ACTTC pool=11
       False positive Signal: fp=AGACT pool=8
False positive Signal: fp=TGCTT pool=12
False positive Signal: fp=GGTCG pool=4
       False positive Signal: fp=GATAC pool=8
       False positive Signal: fp=AGGCG pool=4
(25)
       False positive Signal: fp=TGCGG pool=3
False positive Signal: fp=GTCTC pool=7
       False positive Signal: fp=ACCCA pool=10
       False positive Signal: fp=ACATA pool=9
       False positive Signal: fp=AAGGG pool=5
  30
       False positive Signal: fp=GCGAT pool=9
       False positive Signal: fp=CTATT pool=11
       False positive Signal: fp=TAGGT pool=8
       False positive Signal: fp=GACCG pool=11
       False positive Signal: fp=ACATT pool=1
  35
       False positive Signal: fp=GCTAC pool=2
       False positive Signal: fp=ACAAT pool=7
       False positive Signal: fp=AGGAC pool=7
       False positive Signal: fp=GCCTC pool=13
 40
       False positive Signal: fp=CTAGT pool=9
       False positive Signal: fp=AGTTA pool=8
       False positive Signal: fp=ATAGA pool=14
       False positive Signal: fp=ATTTC pool=10
       False positive Signal: fp=CGATC pool=0
 45
       False positive Signal: fp=GCGTT pool=1
       False positive Signal: fp=CGGAG pool=3
       False positive Signal: fp=GTATG pool=8
       False positive Signal: fp=TCGAA pool=4
```

```
False positive Signal: fp=ACATT pool=8
       False positive Signal: fp=AAAAC pool=11
       False positive Signal: fp=TGCGC pool=11
       False positive Signal: fp=GCAAC pool=11
       False positive Signal: fp=GGCAG pool=1
  5
       False positive Signal: fp=CGAGA pool=2
       False positive Signal: fp=GTCAA pool=9
       False positive Signal: fp=TCGAT pool=10
       False positive Signal: fp=AGGAT pool=7
       False positive Signal: fp=TCAGT pool=14
 10
       False positive Signal: fp=CGACG pool=14
       False positive Signal: fp=GGAAG pool=11
       False positive Signal: fp=GTCTG pool=6
-
-
-
-
15
       False positive Signal: fp=TGCTC pool=13
       False positive Signal: fp=TGCTC pool=15
       False positive Signal: fp=CTAGC pool=13
"
       False positive Signal: fp=GCCTT pool=1
۵ì
       False positive Signal: fp=CATAA pool=4
False positive Signal: fp=GCCAC pool=9
صًا
20
       False positive Signal: fp=CAGCA pool=12
       False positive Signal: fp=ATCGA pool=8
False positive Signal: fp=CAGCC pool=14
<u>|</u>|
       False positive Signal: fp=CGCGA pool=9
Ċ
       False positive Signal: fp=CAGCC pool=8
125
       False positive Signal: fp=GGCTT pool=8
       False positive Signal: fp=GGTCG pool=0
C)
       False positive Signal: fp=TATGA pool=14
       False positive Signal: fp=CCCGC pool=10
       False positive Signal: fp=AGCCG pool=0
       False positive Signal: fp=CTAGC pool=10
 30
       False positive Signal: fp=AGTCT pool=1
       False positive Signal: fp=GAGCT pool=7
       False positive Signal: fp=ACCAA pool=10
       False positive Signal: fp=GTCTT pool=3
 35
       False positive Signal: fp=GGGCG pool=5
       False positive Signal: fp=GAGTT pool=1
       False positive Signal: fp=AATGC pool=13
       False positive Signal: fp=GAGGT pool=7
       False positive Signal: fp=TACTA pool=3
       False positive Signal: fp=TACTT pool=7
 40
       False positive Signal: fp=CTCCA pool=5
       False positive Signal: fp=GATAA pool=0
       False positive Signal: fp=TGTAT pool=0
       False positive Signal: fp=GACCG pool=5
 45
       False positive Signal: fp=TCTAT pool=11
       False positive Signal: fp=CTCTA pool=15
       False positive Signal: fp=TAACG pool=14
       False positive Signal: fp=TCTGC pool=6
```

```
False positive Signal: fp=GAGCT pool=2
        False positive Signal: fp=CGGCT pool=0
        False positive Signal: fp=GCCGA pool=9
   5
        False positive Signal: fp=TAAAC pool=7
        False positive Signal: fp=TAGGT pool=8
        False positive Signal: fp=GGGAT pool=12
        False negative : fp= pool=
        False negative : fp=CTCGA pool=7
  10
        False negative : fp=CTACG pool=1
        False negative : fp=CTACG pool=2
        False negative : fp=GTACC pool=0
False negative : fp=ATCGC pool=1
        False negative : fp=GAATG pool=15
        False negative : fp=ATCGG pool=13
        False negative : fp=GTCGC pool=13
        False negative :
                         fp=ACCCA pool=14
        False negative : fp=CTGGG pool=10
        False negative : fp=CAATT pool=3
        False negative : fp=GACAA pool=1
False negative : fp=TACTA pool=3
        False negative : fp=ACCCC pool=6
10mers:23488
        11mers:20478
  25
        12mers:15215
        13mers:10346
        14mers: 7890
        15mers: 5945
        16mers:5080
  30
        17mers: 4433
        18mers: 4074
        19mers:3825
        20mers:3745
        21mers:3700
  35
        22mers:3705
        23mers:3680
        24mers:3668
        25mers:3676
        26mers: 3670
  40
        27mers:3688
        28mers: 3719
        29mers:3742
        30mers: 3734
        31mers: 3767
  45
        32mers:3837
        33mers:3855
        34mers:3867
        35mers:3953
```

False positive Signal: fp=CCTCA pool=15

```
36mers:3981
        37mers:3995
        38mers: 4024
        39mers:4041
   5
        40mers:4058
        41mers:4039
        42mers:4085
        43mers:4135
        44mers: 4217
  10
        45mers:4386
        46mers:4528
        47mers:4608
48mers:4641
        49mers:4644
  15
        50mers: 4662
        51mers:4705
        52mers:4786
        53mers:4845
        54mers:4875
  20
        55mers:4899
        56mers:4935
        57mers:4925
        58mers:4943
59mers:4993
 25
        60mers:5058
        61mers:5142
        62mers:5174
        63mers:5221
        64mers:5262
  30
        65mers:5295
        66mers:5287
        67mers:5312
        68mers:5383
        69mers:5483
 35
        70mers:5601
        71mers:5707
        72mers:5814
        73mers:5885
        74mers:5954
 40
        75mers:6047
        76mers:6110
        77mers:6127
        78mers:6109
        79mers:6137
 45
        80mers:6176
        81mers:6186
       82mers:6242
       83mers:6311
```

```
84mers:6361
        85mers:6382
        86mers:6372
        87mers:6417
   5
        88mers:6464
        89mers:6507
        90mers:6610
        91mers:6646
        92mers:6616
  10
        93mers:6595
        94mers:6584
        95mers:6631
15 15 20
        96mers:6684
        97mers:6771
        98mers:6832
        99mers:6829
        100mers:6841
        101mers:6887
        102mers:6853
        103mers:6867
104mers:6882
        105mers:6897
---
        106mers:6957
C) C) C) C)
        107mers:7050
        108mers:7186
        109mers:7307
        110mers:7360
        111mers:7470
        112mers:7521
  30
        113mers:7502
        114mers:7556
        115mers:7560
        116mers:7605
        117mers:7619
        118mers:7587
  35
        119mers:7614
        120mers:7620
        121mers:7630
        122mers:7664
  40
        123mers:7626
        124mers:7592
        125mers:7575
        126mers:7532
        127mers:7528
  45
        128mers:7487
        129mers:7419
        130mers:7372
        131mers:7363
```

```
133mers:7453
        134mers:7442
        135mers:7436
        136mers:7425
   5
        137mers:7365
        138mers:7383
        139mers:7426
        140mers:7429
        141mers:7487
  10
        142mers:7491
        143mers:7446
        144mers:7414
145mers:7405
        146mers:7429
  15
        147mers:7434
        148mers:7497
        149mers:7558
        150mers:7550
  20
        151mers:5291
152mers:5258
        153mers:5165
        154mers:5051
        155mers:4937
  25
        156mers:4850
        157mers:4858
        158mers:4844
        159mers:4796
        160mers:4755
  30
        161mers:4666
        162mers:4602
        163mers:4557
        164mers: 4509
        165mers:4503
  35
        166mers:4487
        167mers:4478
        168mers:4466
        169mers:4432
        170mers:4407
  40
        171mers:4389
        172mers:4342
        173mers:4332
        174mers: 4266
        175mers:4166
        176mers:4115
  45
        177mers:4031
        178mers:3959
        179mers:3857
```

132mers:7396

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```
180mers:3758
        181mers:3718
        182mers:3685
        183mers:3632
  5
        184mers:3575
        185mers:3498
        186mers:3454
        187mers:3434
        188mers:3427
  10
        189mers:3424
        190mers:3396
        191mers:3361
192mers:3340
        193mers:3271
  15
        194mers:3218
        195mers:3200
        196mers:3130
        197mers:3091
        198mers:3067
 20
        199mers:3020
        200mers:3013
        201mers:3011
        202mers:3032
        203mers:3015
 25
        204mers:2876
        205mers:2800
        206mers:2757
        207mers:2733
        208mers:2740
        209mers:2680
  30
        210mers:2610
        211mers:2558
        212mers:2511
        213mers:2513
 35
        214mers:2473
        215mers:2397
        216mers:2317
        217mers:2208
        218mers:2143
 40
        219mers:2141
        220mers:2118
        221mers:2114
        222mers:2144
        223mers:2121
 45
        224mers:2104
        225mers:2077
        226mers:2077
        227mers:2029
```

```
228mers:1924
         229mers:1870
         230mers:1823
         231mers:1781
   5
         232mers:1772
         233mers:1731
         234mers:1625
         235mers:1561
         236mers:1515
  10
         237mers:1493
         238mers:1442
         239mers:1379
         240mers:1323
Call for it den for the
         241mers:1246
  15
        242mers:1195
         243mers:1197
        244mers:1160
        245mers:1137
Ē
        246mers:1127
1 20
        247mers:1099
        248mers:1095
Ę
249mers:1076
Ļ٤
        250mers:1046
.
[]
[] 25
        251mers:991
        252mers:944
253mers:916
254mers:901
        255mers:881
        256mers:877
  30
        257mers:862
        258mers:818
        259mers:789
        260mers:771
        261mers:754
  35
        262mers:728
        263mers:698
        264mers:663
        265mers:610
        266mers:566
 40
        267mers:555
        268mers:521
        269mers:474
        270mers:418
        271mers:367
 45
        272mers:343
        273mers:326
        274mers:316
        275mers:294
```

A93 -

```
277mers:236
        278mers:219
        279mers:214
   5
        280mers:218
        281mers:220
        282mers:218
        283mers:209
        284mers:199
  10
        285mers:194
        286mers:196
        287mers:187
        288mers:174
C)
4
        289mers:161
Ī 15
        290mers:139
        291mers:123
T)
        292mers:114
đ١
        293mers:101
294mers:79
4 20
        295mers:58
        296mers:47
C)
        297mers:37
Ļ.
       298mers:27
C)
(T) 25
(E)
       299mers:18
       300mers:11
GGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCT
       GGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAA
       CGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGG
 30
       CCTCCAGCTGACTCATGAGAGAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATG
       TCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTT
         DotsOn=286
       GTAGGGGTAGACATCGCGTAAAAGGGGCCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCTG
 35
       GGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAAC
       GAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGGC
       CTCCAGCTGACTCATGAGAGAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATGT
       CTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTTG
         DotsOn=286
 40
       GGGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGC
       TGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTA
       ACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAG
       GCCTCCAGCTGACTCATGAGAGAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGAT
 45
       GTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTT
```

276mers:263

DotsOn=285

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15
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GGTAGGGGTAGACATCGCGTAAAAGGGGCCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCT GGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAA CGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGG CCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATG TCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTG

DotsOn=286

GGGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGC TGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTA ACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAG GCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGAT GTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTGTAGT

DotsOn=285

GTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCTG GGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAAC GAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGGC CTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATGT CTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTAA

True solution DotsOn=286

GTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCTG GGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAAC GAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGGC CTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATGT CTTCCCGAAAGCTATCGGGTAGAATATCAGATTCCCATGT

DotsOn=284

GGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCT

GGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAA

CGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGG

CCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATG

TCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCCCATG

DotsOn=285

GGGTAGGGGTAGACATCGCGTAAAAGGGGCCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGC TGGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTA ACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAG GCCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGAT GTCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCCCAT

DotsOn=285

GGTAGGGGTAGACATCGCGTAAAAGGGGCCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCT GGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAA CGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGG CCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATG TCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTA

DotsOn=286

5

GTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCTG GGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAAC GAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGGC CTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATGT CTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTGA

DotsOn=285

Solutions: 11

## r300.0.0.DN16.out

Using pool DN16

```
Using sequence r300
   5
        True Signal: fp=CTCGA pool=7
        True Signal: fp=CTACG pool=1
        True Signal: fp=CTACG pool=2
        True Signal: fp=GTACC pool=0
  10
        True Signal: fp=ATCGC pool=1
        True Signal: fp=GAATG pool=15
        True Signal: fp=ATCGG pool=13
C)
        True Signal: fp=GTCGC pool=13
L)
        True Signal: fp=ACCCA pool=14
#=
===
        True Signal: fp=CTGGG pool=10
True Signal: fp=CAATT pool=3
        True Signal: fp=GACAA pool=1
        True Signal: fp=TACTA pool=3
True Signal: fp=ACCCC pool=6
  20
        True Signal: fp=AGACA pool=10
=
        True Signal: fp=TTCCA pool=8
True Signal: fp=TTCCA pool=4
==
        True Signal: fp=ACGCA pool=8
True Signal: fp=GACAC pool=2
Œ١
  25
        True Signal: fp=CGACA pool=10
        True Signal: fp=CGACA pool=11
C
        True Signal: fp=CTACT pool=10
        True Signal: fp=CCCCC pool=2
        True Signal: fp=CCCCC pool=14
  30
        True Signal: fp=TTCCC pool=12
        True Signal: fp=GCCCA pool=1
        True Signal: fp=GAGAA pool=8
        True Signal: fp=CCAGC pool=5
        True Signal: fp=CAGAG pool=3
  35
        True Signal: fp=GCAGA pool=1
        True Signal: fp=GCAGC pool=12
        True Signal: fp=CGCGA pool=3
        True Signal: fp=AGCGC pool=0
        True Signal: fp=GGACC pool=1
        True Signal: fp=CCAGG pool=7
  40
        True Signal: fp=TTAGG pool=1
        True Signal: fp=GAGAG pool=6
        True Signal: fp=TAAAA pool=11
        True Signal: fp=AGCGG pool=4
  45
        True Signal: fp=ACTAA pool=15
        True Signal: fp=CGGGC pool=4
        True Signal: fp=ACTAC pool=4
        True Signal: fp=ACTAC pool=7
```

A 97 -

```
True Signal: fp=AGGGG pool=9
       True Signal: fp=AGGGG pool=5
       True Signal: fp=TTTAA pool=15
       True Signal: fp=GGGGC pool=7
  5
       True Signal: fp=CAGAT pool=11
       True Signal: fp=CATGA pool=14
       True Signal: fp=AATGC pool=1
       True Signal: fp=CCCCT pool=13
       True Signal: fp=GACAT pool=4
       True Signal: fp=TCTTC pool=8
  10
       True Signal: fp=CCAGT pool=10
       True Signal: fp=CCAGT pool=9
True Signal: fp=GCTAC pool=9
True Signal: fp=TTTAG pool=11
       True Signal: fp=TGAGA pool=12
Ţ,
       True Signal: fp=TGCCG pool=8
Ö
       True Signal: fp=GCGCT pool=15
       True Signal: fp=CGCGT pool=4
       True Signal: fp=TGAGG pool=5
<sub>E</sub> 20
       True Signal: fp=TCGGG pool=1
       True Signal: fp=CGGGT pool=8
C)
       True Signal: fp=CGGGT pool=12
⊨⊧
       True Signal: fp=GGCGT pool=12
True Signal: fp=TATCA pool=4
Œ١
       True Signal: fp=ATATC pool=9
[] 25
       True Signal: fp=CTATC pool=6
True Signal: fp=GGGGT pool=11
       True Signal: fp=GGGGT pool=14
       True Signal: fp=TATCG pool=3
       True Signal: fp=GCTAT pool=3
 30
       True Signal: fp=GATGT pool=0
       True Signal: fp=TGGCT pool=6
       True Signal: fp=CTCAA pool=15
       True Signal: fp=ATCAG pool=6
       True Signal: fp=CGATA pool=2
 35
       True Signal: fp=CTGAC pool=5
       True Signal: fp=GTATT pool=11
       True Signal: fp=ATGAG pool=8
       True Signal: fp=GCCTC pool=11
 40
       True Signal: fp=GTGAA pool=2
       True Signal: fp=GCGTA pool=0
       True Signal: fp=GCGTA pool=9
       True Signal: fp=GCCTG pool=12
       True Signal: fp=GGATG pool=1
       True Signal: fp=GTGAG pool=0
 45
       True Signal: fp=TTAAC pool=6
       True Signal: fp=AAAGC pool=1
       True Signal: fp=AAAGC pool=6
```

A 98 -

CA1 - 206444.1

```
True Signal: fp=CTCAT pool=8
       True Signal: fp=AGATT pool=12
       True Signal: fp=CAGCC pool=10
       True Signal: fp=CGCAC pool=3
  5
       True Signal: fp=AAAGG pool=1
       True Signal: fp=GACCC pool=9
       True Signal: fp=CCCTT pool=1
       True Signal: fp=CGATT pool=11
 10
       True Signal: fp=GAAGC pool=5
       True Signal: fp=TCATG pool=1
       True Signal: fp=AGGAC pool=6
True Signal: fp=TGCTA pool=4
Œ)
       True Signal: fp=GAAGG pool=10
       True Signal: fp=AATAA pool=2
15
ď)
       True Signal: fp=TGCTG pool=9
(T)
       True Signal: fp=GGCAG pool=1
True Signal: fp=GAGCG pool=3
Œ)
       True Signal: fp=CTTGG pool=1
       True Signal: fp=ACAAT pool=6
≅ 20
True Signal: fp=ACTCA pool=7
       True Signal: fp=TCCAC pool=10
<u>i</u>
True Signal: fp=AATAG pool=13
(T)
       True Signal: fp=GATAA pool=1
True Signal: fp=TACGA pool=6
       True Signal: fp=TATTC pool=2
       True Signal: fp=CCTCC pool=3
       True Signal: fp=TAACG pool=14
       True Signal: fp=AAGCT pool=12
       True Signal: fp=AAGCT pool=5
 30
       True Signal: fp=ACTCG pool=15
       True Signal: fp=CAGCT pool=9
       True Signal: fp=TCCAG pool=8
       True Signal: fp=CGCAT pool=11
 35
       True Signal: fp=TCGAC pool=9
       True Signal: fp=TCGAC pool=5
       True Signal: fp=GCTCA pool=5
       True Signal: fp=AGGAT pool=8
       True Signal: fp=TAGGA pool=15
 40
       True Signal: fp=AGTGA pool=14
       True Signal: fp=TAGGC pool=13
       True Signal: fp=TACGG pool=7
       True Signal: fp=TAGGG pool=13
       True Signal: fp=AATAT pool=13
 45
       True Signal: fp=GGTGC pool=1
       True Signal: fp=GGTGC pool=5
       True Signal: fp=TCCAT pool=9
       True Signal: fp=TGAAT pool=10
```

True Signal: fp=AAGCC pool=8

```
True Signal: fp=TATTT pool=6
        True Signal: fp=TGTCC pool=10
        True Signal: fp=AACTA pool=1
        True Signal: fp=AACTA pool=3
        True Signal: fp=CACTC pool=7
   5
        True Signal: fp=CTCCA pool=6
        True Signal: fp=AAGTA pool=7
        True Signal: fp=CAGTA pool=8
        True Signal: fp=GACTC pool=14
  10
        True Signal: fp=GTCCA pool=3
        True Signal: fp=CTGCA pool=11
        True Signal: fp=ATAGG pool=14
<u>L</u>
        True Signal: fp=GTAGA pool=8
True Signal: fp=GTAGA pool=9
  15
        True Signal: fp=TGTCT pool=0
4
        True Signal: fp=CAGTG pool=15
Œ١
        True Signal: fp=GTAGC pool=14
True Signal: fp=GTGCC pool=10
۵ì
        True Signal: fp=CAAAC pool=11
=
C)
  20
        True Signal: fp=GTAGG pool=3
        True Signal: fp=AAAAG pool=0
1
        True Signal: fp=AAAAG pool=2
True Signal: fp=ACACG pool=5
        True Signal: fp=GAAAG pool=14
  25
        True Signal: fp=CCCGA pool=15
        True Signal: fp=AGCCC pool=10
        True Signal: fp=AGAGA pool=13
        True Signal: fp=ATGCT pool=6
        True Signal: fp=AGAGC pool=14
  30
        True Signal: fp=GCTTA pool=9
        True Signal: fp=AGGCC pool=12
        True Signal: fp=CGGCA pool=10
        True Signal: fp=GCCGA pool=7
        True Signal: fp=CCTTG pool=2
  35
       True Signal: fp=GCTTC pool=5
       True Signal: fp=TTCGC pool=10
       True Signal: fp=GCACG pool=10
       True Signal: fp=TTGGC pool=12
       True Signal: fp=GTGCT pool=9
  40
       True Signal: fp=ACGGG pool=0
       True Signal: fp=ACGGG pool=3
       True Signal: fp=GCGGC pool=11
       True Signal: fp=TAGAA pool=2
       True Signal: fp=CCACT pool=13
 45
       True Signal: fp=GGGCG pool=2
       True Signal: fp=TCAGA pool=9
       True Signal: fp=CGTAA pool=12
       True Signal: fp=TAGAC pool=11
```

```
True Signal: fp=AGCCT pool=0
       True Signal: fp=CGTAC pool=7
       True Signal: fp=CATCG pool=7
       True Signal: fp=TCGCA pool=7
  5
       True Signal: fp=TCCCG pool=1
       True Signal: fp=AGTAG pool=9
       True Signal: fp=AGGCT pool=10
       True Signal: fp=GGCCT pool=8
  10
       True Signal: fp=TCGCG pool=5
       True Signal: fp=GGTAG pool=10
C)
       True Signal: fp=GGTAG pool=3
L)
       True Signal: fp=GGGCT pool=8
Į.
       True Signal: fp=TGGGG pool=1
15
       True Signal: fp=AGTAT pool=0
Œ)
       True Signal: fp=ATGTC pool=9
Œ١
       True Signal: fp=TGACT pool=9
C)
       True Signal: fp=CTGTC pool=11
Œ)
       True Signal: fp=GTCTC pool=4
。
[] 20
       True Signal: fp=CTGTG pool=3
       True Signal: fp=CTAAA pool=14
True Signal: fp=ACATC pool=13
       True Signal: fp=GTAAA pool=13
       True Signal: fp=ATAAG pool=13
C) 25
       True Signal: fp=AGCTA pool=4
       True Signal: fp=GTCTT pool=13
       True Signal: fp=AGCTG pool=4
       True Signal: fp=AGGTC pool=1
       True Signal: fp=CGCTG pool=12
 30
       True Signal: fp=GGCTC pool=14
       True Signal: fp=AGGTG pool=8
       True Signal: fp=GGGTA pool=10
       True Signal: fp=GGGTA pool=15
       True Signal: fp=GGCTG pool=2
       True Signal: fp=GGGTC pool=10
 35
       True Signal: fp=CGAAA pool=3
       True Signal: fp=ATTCA pool=13
       True Signal: fp=ATTCA pool=6
       True Signal: fp=TTCAA pool=9
 40
       True Signal: fp=TTCAA pool=12
       True Signal: fp=AACGA pool=11
       True Signal: fp=ACGAA pool=13
       True Signal: fp=ATTCC pool=2
       True Signal: fp=CCGAA pool=12
 45
       True Signal: fp=CCGAA pool=14
       True Signal: fp=CATTC pool=13
       True Signal: fp=CCATT pool=11
       True Signal: fp=GGGTG pool=6
```

True Signal: fp=CTTAT pool=13

```
True Signal: fp=AGAAG pool=0
        True Signal: fp=CCCAG pool=3
       True Signal: fp=CCCAG pool=5
       True Signal: fp=CACGC pool=10
  5
       True Signal: fp=CTTCC pool=14
       True Signal: fp=CTTCC pool=6
       True Signal: fp=TTATT pool=0
       True Signal: fp=GATTC pool=12
       True Signal: fp=GATTC pool=14
  10
       True Signal: fp=CAGGA pool=6
       True Signal: fp=GCATT pool=15
       True Signal: fp=AGCTT pool=4
네
부:
및 15
       True Signal: fp=ATTCG pool=9
       True Signal: fp=ATTCG pool=5
       True Signal: fp=CGAAG pool=14
       True Signal: fp=CACGG pool=9
Ţ)
Œ١
       True Signal: fp=AAGGG pool=13
True Signal: fp=GAGGC pool=11
       True Signal: fp=GGCTT pool=11
(I)
<sub>=</sub> 20
       True Signal: fp=AAACT pool=4
True Signal: fp=TCAAA pool=4
<u>ļ_</u>
       True Signal: fp=TCAAC pool=5
       True Signal: fp=CAACT pool=4
۵ì
       True Signal: fp=AGAAT pool=10
_25
       True Signal: fp=AATTT pool=8
       True Signal: fp=TACCC pool=5
       True Signal: fp=ACGAT pool=1
       True Signal: fp=CGAAT pool=6
       True Signal: fp=TAAGG pool=1
 30
       True Signal: fp=AAGGT pool=9
       True Signal: fp=AAGGT pool=12
       True Signal: fp=GCTGA pool=12
       True Signal: fp=TGCAG pool=5
       True Signal: fp=TAGCG pool=5
 35
       True Signal: fp=GCGAT pool=14
       True Signal: fp=GCTGC pool=10
       True Signal: fp=GCTGG pool=1
       True Signal: fp=GGTCG pool=0
       True Signal: fp=TCAAT pool=4
 40
       True Signal: fp=TAAGT pool=2
       True Signal: fp=CCTGT pool=5
       True Signal: fp=TCTCG pool=12
       True Signal: fp=TGTGA pool=9
       True Signal: fp=GCTGT pool=2
 45
       True Signal: fp=GGTCT pool=13
       True Signal: fp=CAATA pool=7
       True Signal: fp=GAATA pool=0
       True Signal: fp=GAATA pool=15
```

A 102 - CA1 - 206444.1

```
True Signal: fp=ATTTA pool=12
        10mers:18240
        11mers:2483
   5
        12mers:581
        13mers:357
        14mers:335
        15mers:325
        16mers:321
  10
        17mers:322
        18mers:319
        19mers:317
20mers:315
        21mers:313
        22mers:313
        23mers:310
        24mers:310
        25mers:310
        26mers:307
20
C
C
C
C
C
C
C
C
 20
        27mers:305
        28mers:304
        29mers:302
        30mers:302
        31mers:301
        32mers:298
        33mers:297
        34mers:296
        35mers:295
        36mers:294
 30
        37mers:293
        38mers:292
        39mers:292
        40mers:291
        41mers:290
 35
        42mers:289
        43mers:288
        44mers:287
        45mers:288
        46mers:285
 40
        47mers:283
        48mers:282
        49mers:281
        50mers:281
        51mers:279
 45
        52mers:278
        53mers:277
        54mers:276
        55mers:275
```

True Signal: fp=ATTTA pool=1

```
56mers:275
        57mers:275
        58mers:273
        59mers:271
   5
        60mers:271
        61mers:271
        62mers:271
        63mers:268
        64mers:267
  10
        65mers:268
        66mers:265
        67mers:264
68mers:262
        69mers:261
        70mers:260
        71mers:259
        72mers:258
        73mers:257
        74mers:254
E
  20
        75mers:253
76mers:252
<u>|</u>
        77mers:252
.
C)
()
        78mers:250
        79mers:250
25
        80mers:249
        81mers:247
        82mers:246
        83mers:245
        84mers:245
  30
        85mers:244
        86mers:241
        87mers:240
        88mers:239
        89mers:238
 35
        90mers:239
        91mers:239
        92mers:237
        93mers:234
        94mers:233
 40
        95mers:232
        96mers:230
        97mers:229
        98mers:228
        99mers:228
 45
        100mers:227
        101mers:225
        102mers:224
        103mers:225
```

A 104 -

```
104mers:222
        105mers:222
        106mers:222
        107mers:220
  5
        108mers:218
        109mers:217
        110mers:217
        111mers:216
        112mers:215
        113mers:214
  10
        114mers:211
        115mers:211
116mers:209
        117mers:208
        118mers:209
        119mers:207
        120mers:206
        121mers:203
        122mers:201
        123mers:200
        124mers:199
        125mers:199
        126mers:197
        127mers:196
        128mers:195
        129mers:195
        130mers:193
        131mers:192
        132mers:192
  30
        133mers:191
        134mers:188
        135mers:187
        136mers:186
        137mers:185
  35
        138mers:184
        139mers:183
        140mers:182
        141mers:181
        142mers:180
        143mers:179
  40
        144mers:179
        145mers:178
        146mers:177
        147mers:176
  45
        148mers:174
        149mers:173
        150mers:173
        151mers:171
```

A 105 - CA1 - 206444.1

```
152mers:170
        153mers:169
        154mers:168
        155mers:167
   5
        156mers:166
        157mers:166
        158mers:165
        159mers:163
        160mers:161
  10
        161mers:160
        162mers:159
        163mers:158
CSWYSGUS CIUSCI
        164mers:157
        165mers:158
        166mers:157
        167mers:154
        168mers:153
        169mers:153
        170mers:152
  20
        171mers:150
        172mers:150
        173mers:150
        174mers:149
        175mers:147
  25
        176mers:147
        177mers:144
        178mers:144
        179mers:142
        180mers:142
  30
        181mers:140
        182mers:139
        183mers:138
        184mers:137
        185mers:137
  35
        186mers:135
        187mers:134
        188mers:133
        189mers:131
        190mers:130
  40
        191mers:132
        192mers:130
        193mers:128
        194mers:126
        195mers:125
  45
        196mers:124
        197mers:124
        198mers:122
        199mers:122
```

A 106 - CAI - 206444.1

```
201mers:119
        202mers:120
        203mers:120
   5
        204mers:117
        205mers:115
        206mers:115
        207mers:113
        208mers:113
  10
        209mers:110
        210mers:109
        211mers:108
OSTYSEUS . OILUSOU
        212mers:107
        213mers:106
  15
        214mers:106
        215mers:105
        216mers:103
        217mers:103
        218mers:102
  20
        219mers:102
        220mers:103
        221mers:99
        222mers:96
        223mers:96
  25
        224mers:95
        225mers:94
        226mers:92
        227mers:91
        228mers:90
  30
        229mers:89
        230mers:87
        231mers:86
        232mers:86
        233mers:84
  35
        234mers:81
        235mers:79
        236mers:78
        237mers:77
        238mers:77
  40
        239mers:78
        240mers:75
        241mers:72
        242mers:70
        243mers:69
  45
        244mers:68
        245mers:67
        246mers:66
        247mers:65
```

200mers:120

<del>[</del>107 -

```
248mers:64
        249mers:64
        250mers:64
        251mers:62
   5
        252mers:60
        253mers:60
        254mers:60
        255mers:57
        256mers:56
  10
        257mers:55
        258mers:55
        259mers:53
CSTYSEUS CILCEOU
        260mers:51
        261mers:50
  15
        262mers:50
        263mers:48
        264mers:48
        265mers:49
        266mers:48
  20
        267mers:44
        268mers:43
        269mers:43
        270mers:42
        271mers:41
  25
        272mers:38
         273mers:38
        274mers:36
        275mers:34
        276mers:33
  30
        277mers:33
        278mers:32
        279mers:30
        280mers:28
        281mers:25
  35
        282mers:24
        283mers:24
        284mers:23
        285mers:22
        286mers:19
  40
        287mers:17
        288mers:16
        289mers:15
        290mers:15
        291mers:13
  45
        292mers:11
        293mers:9
        294mers:8
        295mers:7
```

A 108 - CA1 - 206444.1

5

10

296mers:6 297mers:5 298mers:4 299mers:3 300mers:1

GTAGGGGTAG ACATCGCGTA AAAGGGGCGT ACCCAGGACC CCCCTTGGCT CAATAAGTAG CGCTGGGGTG CTACTACGGG TCTCGACACG CATTCAACTA AAAGCTTCCA TTCGCACGGG CTTATTTAAC GAAGGTCGCG ATAAGGTGCC GAATAGGCTG CAGAGCGGCA GCCTGTCCAG TGAATGCTGT GAGGCCTCCA GCTGACTCAT GAGAGAAGCC CAGTATTCAA ACTACGATTC CACTCGACAA TTTAGGATGT CTTCCCGAAA GCTATCGGGT AGAATATCAG ATTCGTTTAA

True solution DotsOn=285

Solutions: 1

## r300.100.15.DN16.out

Using pool DN16

```
Using sequence r300
   5
        True Signal: fp=CTCGA pool=7
        True Signal: fp=CTACG pool=1
        True Signal: fp=CTACG pool=2
        True Signal: fp=GTACC pool=0
  10
        True Signal: fp=ATCGC pool=1
        True Signal: fp=GAATG pool=15
        True Signal: fp=ATCGG pool=13
True Signal: fp=GTCGC pool=13
        True Signal: fp=ACCCA pool=14
  15
        True Signal: fp=CTGGG pool=10
        True Signal: fp=CAATT pool=3
        True Signal: fp=GACAA pool=1
        True Signal: fp=TACTA pool=3
        True Signal: fp=ACCCC pool=6
  20
        True Signal: fp=AGACA pool=10
        True Signal: fp=TTCCA pool=8
        True Signal: fp=TTCCA pool=4
        True Signal: fp=ACGCA pool=8
        True Signal: fp=GACAC pool=2
        True Signal: fp=CGACA pool=10
  25
        True Signal: fp=CGACA pool=11
        True Signal: fp=CTACT pool=10
        True Signal: fp=CCCCC pool=2
        True Signal: fp=CCCCC pool=14
  30
        True Signal: fp=TTCCC pool=12
        True Signal: fp=GCCCA pool=1
        True Signal: fp=GAGAA pool=8
        True Signal: fp=CCAGC pool=5
        True Signal: fp=CAGAG pool=3
  35
        True Signal: fp=GCAGA pool=1
        True Signal: fp=GCAGC pool=12
        True Signal: fp=CGCGA pool=3
        True Signal: fp=AGCGC pool=0
        True Signal: fp=GGACC pool=1
  40
        True Signal: fp=CCAGG pool=7
       True Signal: fp=TTAGG pool=1
        True Signal: fp=GAGAG pool=6
        True Signal: fp=TAAAA pool=11
        True Signal: fp=AGCGG pool=4
  45
        True Signal: fp=ACTAA pool=15
        True Signal: fp=CGGGC pool=4
        True Signal: fp=ACTAC pool=4
        True Signal: fp=ACTAC pool=7
```

```
True Signal: fp=AGGGG pool=9
       True Signal: fp=AGGGG pool=5
       True Signal: fp=TTTAA pool=15
       True Signal: fp=GGGGC pool=7
       True Signal: fp=CAGAT pool=11
  5
       True Signal: fp=CATGA pool=14
       True Signal: fp=AATGC pool=1
       True Signal: fp=CCCCT pool=13
       True Signal: fp=GACAT pool=4
       True Signal: fp=TCTTC pool=8
 10
       True Signal: fp=CCAGT pool=10
       True Signal: fp=CCAGT pool=9
       True Signal: fp=GCTAC pool=9
True Signal: fp=TTTAG pool=11
       True Signal: fp=TGAGA pool=12
       True Signal: fp=TGCCG pool=8
True Signal: fp=GCGCT pool=15
       True Signal: fp=CGCGT pool=4
True Signal: fp=TGAGG pool=5
(I)
       True Signal: fp=TCGGG pool=1
 20
Ħ
       True Signal: fp=CGGGT pool=8
C
       True Signal: fp=CGGGT pool=12
je i
       True Signal: fp=GGCGT pool=12
.
Cj
       True Signal: fp=TATCA pool=4
Œ١
       True Signal: fp=ATATC pool=9
5 25
       True Signal: fp=CTATC pool=6
       True Signal: fp=GGGGT pool=11
       True Signal: fp=GGGGT pool=14
       True Signal: fp=TATCG pool=3
       True Signal: fp=GCTAT pool=3
 30
       True Signal: fp=GATGT pool=0
       True Signal: fp=TGGCT pool=6
       True Signal: fp=CTCAA pool=15
       True Signal: fp=ATCAG pool=6
       True Signal: fp=CGATA pool=2
 35
       True Signal: fp=CTGAC pool=5
       True Signal: fp=GTATT pool=11
       True Signal: fp=ATGAG pool=8
       True Signal: fp=GCCTC pool=11
       True Signal: fp=GTGAA pool=2
 40
       True Signal: fp=GCGTA pool=0
       True Signal: fp=GCGTA pool=9
       True Signal: fp=GCCTG pool=12
       True Signal: fp=GGATG pool=1
 45
       True Signal: fp=GTGAG pool=0
       True Signal: fp=TTAAC pool=6
       True Signal: fp=AAAGC pool=1
       True Signal: fp=AAAGC pool=6
```

A111 -

```
True Signal: fp=AAGCC pool=8
       True Signal: fp=CTCAT pool=8
       True Signal: fp=AGATT pool=12
       True Signal: fp=CAGCC pool=10
       True Signal: fp=CGCAC pool=3
  5
       True Signal: fp=AAAGG pool=1
       True Signal: fp=GACCC pool=9
       True Signal: fp=CCCTT pool=1
       True Signal: fp=CGATT pool=11
       True Signal: fp=GAAGC pool=5
 10
       True Signal: fp=TCATG pool=1
       True Signal: fp=AGGAC pool=6
       True Signal: fp=TGCTA pool=4
Ţ)
       True Signal: fp=GAAGG pool=10
       True Signal: fp=AATAA pool=2
       True Signal: fp=TGCTG pool=9
True Signal: fp=GGCAG pool=1
       True Signal: fp=GAGCG pool=3
Ē
       True Signal: fp=CTTGG pool=1
       True Signal: fp=ACAAT pool=6
 20
       True Signal: fp=ACTCA pool=7
C)
       True Signal: fp=TCCAC pool=10
True Signal: fp=AATAG pool=13
       True Signal: fp=GATAA pool=1
(T)
       True Signal: fp=TACGA pool=6
25
       True Signal: fp=TATTC pool=2
       True Signal: fp=CCTCC pool=3
       True Signal: fp=TAACG pool=14
       True Signal: fp=AAGCT pool=12
       True Signal: fp=AAGCT pool=5
 30
       True Signal: fp=ACTCG pool=15
       True Signal: fp=CAGCT pool=9
       True Signal: fp=TCCAG pool=8
       True Signal: fp=CGCAT pool=11
       True Signal: fp=TCGAC pool=9
 35
       True Signal: fp=TCGAC pool=5
       True Signal: fp=GCTCA pool=5
       True Signal: fp=AGGAT pool=8
       True Signal: fp=TAGGA pool=15
 40
       True Signal: fp=AGTGA pool=14
       True Signal: fp=TAGGC pool=13
       True Signal: fp=TACGG pool=7
       True Signal: fp=TAGGG pool=13
       True Signal: fp=AATAT pool=13
 45
       True Signal: fp=GGTGC pool=1
       True Signal: fp=GGTGC pool=5
       True Signal: fp=TCCAT pool=9
       True Signal: fp=TGAAT pool=10
```

A112 - CA1 - 206444.1

```
True Signal: fp=TATTT pool=6
       True Signal: fp=TGTCC pool=10
       True Signal: fp=AACTA pool=1
       True Signal: fp=AACTA pool=3
  5
       True Signal: fp=CACTC pool=7
       True Signal: fp=CTCCA pool=6
       True Signal: fp=AAGTA pool=7
       True Signal: fp=CAGTA pool=8
       True Signal: fp=GACTC pool=14
  10
       True Signal: fp=GTCCA pool=3
       True Signal: fp=CTGCA pool=11
       True Signal: fp=ATAGG pool=14
C
       True Signal: fp=GTAGA pool=8
회
분15
       True Signal: fp=GTAGA pool=9
       True Signal: fp=TGTCT pool=0
       True Signal: fp=CAGTG pool=15
ď)
       True Signal: fp=GTAGC pool=14
ø
       True Signal: fp=GTGCC pool=10
Ċ
       True Signal: fp=CAAAC pool=11
<sup>(1)</sup>20
       True Signal: fp=GTAGG pool=3
       True Signal: fp=AAAAG pool=0
True Signal: fp=AAAAG pool=2
       True Signal: fp=ACACG pool=5
Ľ)
       True Signal: fp=GAAAG pool=14
       True Signal: fp=CCCGA pool=15
       True Signal: fp=AGCCC pool=10
       True Signal: fp=AGAGA pool=13
       True Signal: fp=ATGCT pool=6
       True Signal: fp=AGAGC pool=14
 30
       True Signal: fp=GCTTA pool=9
       True Signal: fp=AGGCC pool=12
       True Signal: fp=CGGCA pool=10
       True Signal: fp=GCCGA pool=7
       True Signal: fp=CCTTG pool=2
 35
       True Signal: fp=GCTTC pool=5
       True Signal: fp=TTCGC pool=10
       True Signal: fp=GCACG pool=10
       True Signal: fp=TTGGC pool=12
       True Signal: fp=GTGCT pool=9
 40
       True Signal: fp=ACGGG pool=0
       True Signal: fp=ACGGG pool=3
       True Signal: fp=GCGGC pool=11
       True Signal: fp=TAGAA pool=2
       True Signal: fp=CCACT pool=13
       True Signal: fp=GGGCG pool=2
 45
       True Signal: fp=TCAGA pool=9
       True Signal: fp=CGTAA pool=12
       True Signal: fp=TAGAC pool=11
```

**A** 113 -

```
True Signal: fp=AGCCT pool=0
       True Signal: fp=CGTAC pool=7
       True Signal: fp=CATCG pool=7
       True Signal: fp=TCGCA pool=7
  5
       True Signal: fp=TCCCG pool=1
       True Signal: fp=AGTAG pool=9
       True Signal: fp=AGGCT pool=10
       True Signal: fp=GGCCT pool=8
  10
       True Signal: fp=TCGCG pool=5
       True Signal: fp=GGTAG pool=10
       True Signal: fp=GGTAG pool=3
True Signal: fp=GGGCT pool=8
True Signal: fp=TGGGG pool=1
  15
       True Signal: fp=AGTAT pool=0
       True Signal: fp=ATGTC pool=9
L)
       True Signal: fp=TGACT pool=9
True Signal: fp=CTGTC pool=11
       True Signal: fp=GTCTC pool=4
20
       True Signal: fp=CTGTG pool=3
       True Signal: fp=CTAAA pool=14
True Signal: fp=ACATC pool=13
ļ.
       True Signal: fp=GTAAA pool=13
True Signal: fp=ATAAG pool=13
       True Signal: fp=AGCTA pool=4
       True Signal: fp=GTCTT pool=13
True Signal: fp=AGCTG pool=4
       True Signal: fp=AGGTC pool=1
       True Signal: fp=CGCTG pool=12
 30
       True Signal: fp=GGCTC pool=14
       True Signal: fp=AGGTG pool=8
       True Signal: fp=GGGTA pool=10
       True Signal: fp=GGGTA pool=15
       True Signal: fp=GGCTG pool=2
       True Signal: fp=GGGTC pool=10
 35
       True Signal: fp=CGAAA pool=3
       True Signal: fp=ATTCA pool=13
       True Signal: fp=ATTCA pool=6
       True Signal: fp=TTCAA pool=9
 40
       True Signal: fp=TTCAA pool=12
       True Signal: fp=AACGA pool=11
       True Signal: fp=ACGAA pool=13
       True Signal: fp=ATTCC pool=2
       True Signal: fp=CCGAA pool=12
 45
       True Signal: fp=CCGAA pool=14
       True Signal: fp=CATTC pool=13
       True Signal: fp=CCATT pool=11
       True Signal: fp=GGGTG pool=6
```

True Signal: fp=CTTAT pool=13

```
True Signal: fp=AGAAG pool=0
       True Signal: fp=CCCAG pool=3
       True Signal: fp=CCCAG pool=5
       True Signal: fp=CACGC pool=10
       True Signal: fp=CTTCC pool=14
  5
       True Signal: fp=CTTCC pool=6
       True Signal: fp=TTATT pool=0
       True Signal: fp=GATTC pool=12
       True Signal: fp=GATTC pool=14
       True Signal: fp=CAGGA pool=6
 10
       True Signal: fp=GCATT pool=15
       True Signal: fp=AGCTT pool=4
C)
       True Signal: fp=ATTCG pool=9
Ľ)
       True Signal: fp=ATTCG pool=5
<u>-</u>15
       True Signal: fp=CGAAG pool=14
       True Signal: fp=CACGG pool=9
S
       True Signal: fp=AAGGG pool=13
       True Signal: fp=GAGGC pool=11
True Signal: fp=GGCTT pool=11
<sup>(1)</sup>20
       True Signal: fp=AAACT pool=4
E
       True Signal: fp=TCAAA pool=4
True Signal: fp=TCAAC pool=5
į.
       True Signal: fp=CAACT pool=4
[]
[]
25
       True Signal: fp=AGAAT pool=10
       True Signal: fp=AATTT pool=8
       True Signal: fp=TACCC pool=5
C)
       True Signal: fp=ACGAT pool=1
       True Signal: fp=CGAAT pool=6
       True Signal: fp=TAAGG pool=1
       True Signal: fp=AAGGT pool=9
 30
       True Signal: fp=AAGGT pool=12
       True Signal: fp=GCTGA pool=12
       True Signal: fp=TGCAG pool=5
       True Signal: fp=TAGCG pool=5
 35
       True Signal: fp=GCGAT pool=14
       True Signal: fp=GCTGC pool=10
       True Signal: fp=GCTGG pool=1
       True Signal: fp=GGTCG pool=0
       True Signal: fp=TCAAT pool=4
 40
       True Signal: fp=TAAGT pool=2
       True Signal: fp=CCTGT pool=5
       True Signal: fp=TCTCG pool=12
       True Signal: fp=TGTGA pool=9
       True Signal: fp=GCTGT pool=2
 45
       True Signal: fp=GGTCT pool=13
       True Signal: fp=CAATA pool=7
       True Signal: fp=GAATA pool=0
       True Signal: fp=GAATA pool=15
```

```
True Signal: fp=ATTTA pool=1
       True Signal: fp=ATTTA pool=12
       False positive Signal: fp=AGACT pool=2
       False positive Signal: fp=AACTG pool=12
       False positive Signal: fp=CCACA pool=11
  5
       False positive Signal: fp=GCCGC pool=7
       False positive Signal: fp=CATAC pool=2
       False positive Signal: fp=GTGTA pool=0
       False positive Signal: fp=AAGAG pool=9
  10
       False positive Signal: fp=GATGT pool=7
       False positive Signal: fp=CAAGC pool=6
       False positive Signal: fp=GGGAC pool=3
False positive Signal: fp=ATTTC pool=9
       False positive Signal: fp=GATTA pool=1
False positive Signal: fp=TCCCT pool=10
  15
       False positive Signal: fp=GGTAC pool=11
       False positive Signal: fp=GCAGC pool=9
       False positive Signal: fp=CCGCT pool=4
       False positive Signal: fp=CATTT pool=3
       False positive Signal: fp=ACTGA pool=15
 20
2
       False positive Signal: fp=AGAGC pool=2
False positive Signal: fp=GTCCA pool=10
Ļ١
       False positive Signal: fp=TGAGA pool=2
<u>_</u>]
       False positive Signal: fp=GAATC pool=10
۵ì
       False positive Signal: fp=ATCTC pool=1
 25
       False positive Signal: fp=CACCC pool=5
       False positive Signal: fp=CTGGT pool=10
       False positive Signal: fp=CGGCT pool=7
       False positive Signal: fp=CAAGT pool=3
       False positive Signal: fp=TAGAT pool=2
 30
       False positive Signal: fp=AGGCG pool=2
       False positive Signal: fp=GTCTA pool=11
       False positive Signal: fp=CAATA pool=1
       False positive Signal: fp=GTAGG pool=8
       False positive Signal: fp=GTGAC pool=2
 35
       False positive Signal: fp=GATGC pool=4
       False positive Signal: fp=GACGC pool=2
       False positive Signal: fp=AGCCA pool=12
       False positive Signal: fp=GCAGC pool=7
       False positive Signal: fp=GGTGA pool=7
 40
       False positive Signal: fp=TATCT pool=6
       False positive Signal: fp=CATAT pool=15
       False positive Signal: fp=AGATC pool=7
       False positive Signal: fp=TATAG pool=14
 45
       False positive Signal: fp=TCAAA pool=0
       False positive Signal: fp=ACTCA pool=10
       False positive Signal: fp=GACAA pool=3
       False positive Signal: fp=GTCTA pool=9
```

A 116 - CA1 - 206444.1

```
False positive Signal: fp=ACTCC pool=1
       False positive Signal: fp=CGGAG pool=6
       False positive Signal: fp=CCTAA pool=8
       False positive Signal: fp=GTCCG pool=13
       False positive Signal: fp=CGACA pool=15
  5
       False positive Signal: fp=CCTGA pool=10
       False positive Signal: fp=CCATT pool=9
       False positive Signal: fp=ACTAT pool=4
       False positive Signal: fp=AACCG pool=9
       False positive Signal: fp=CGATC pool=11
 10
       False positive Signal: fp=TGGAG pool=3
       False positive Signal: fp=AGCCC pool=0
False positive Signal: fp=ATCTC pool=10
L)
       False positive Signal: fp=CATTA pool=6
-
-
-
15
       False positive Signal: fp=GCTGG pool=12
       False positive Signal: fp=GTGCA pool=13
ď)
       False positive Signal: fp=CACTC pool=10
ā
       False positive Signal: fp=AACAT pool=14
False positive Signal: fp=GCCAC pool=7
đ)
       False positive Signal: fp=AAGAC pool=3
₽ 20
       False positive Signal: fp=CGTGG pool=12
False positive Signal: fp=CGTTT pool=0
<u>L</u>i
       False positive Signal: fp=CTCGC pool=13
Ċ
       False positive Signal: fp=GGAAA pool=9
۵ì
       False positive Signal: fp=GGTCC pool=15
[]25
       False positive Signal: fp=TCTGA pool=15
False positive Signal: fp=TCAAC pool=15
       False positive Signal: fp=AAGCA pool=9
       False positive Signal: fp=GGAAG pool=1
       False positive Signal: fp=GTGGG pool=1
 30
       False positive Signal: fp=TAAGC pool=9
       False positive Signal: fp=TGGGA pool=10
       False positive Signal: fp=GTTTA pool=2
       False positive Signal: fp=GGGCG pool=12
       False positive Signal: fp=ACAGG pool=0
 35
       False positive Signal: fp=ACATC pool=9
       False positive Signal: fp=CAATG pool=3
       False positive Signal: fp=AAAGC pool=9
       False positive Signal: fp=GGAAC pool=5
       False positive Signal: fp=GGGGA pool=0
 40
       False positive Signal: fp=CTGGT pool=13
       False positive Signal: fp=GGGTA pool=15
       False positive Signal: fp=ATCTC pool=9
       False positive Signal: fp=GTCAC pool=15
       False positive Signal: fp=AAGTT pool=7
 45
       False positive Signal: fp=CCATG pool=8
       False positive Signal: fp=TAAGG pool=15
       False positive Signal: fp=AAAGC pool=6
```

A 117 -

```
False positive Signal: fp=CCGGT pool=3
       False positive Signal: fp=ACAAA pool=13
       False positive Signal: fp=TCTTT pool=14
       False positive Signal: fp=CTGTA pool=6
       False positive Signal: fp=CAGTG pool=15
  5
       False positive Signal: fp=CCCAG pool=0
       False negative : fp= pool=
       False negative : fp=CTCGA pool=7
       False negative : fp=CTACG pool=1
       False negative : fp=CTACG pool=2
 10
       False negative : fp=GTACC pool=0
        False negative : fp=ATCGC pool=1
False negative : fp=GAATG pool=15
False negative : fp=ATCGG pool=13
       False negative : fp=GTCGC pool=13
       False negative : fp=ACCCA pool=14
       False negative : fp=CTGGG pool=10
       False negative : fp=CAATT pool=3
       False negative : fp=GACAA pool=1
Ō)
 20
        False negative : fp=TACTA pool=3
₽
C) 25
        False negative : fp=ACCCC pool=6
        10mers:23552
        11mers:20332
        12mers:15187
        13mers:10500
        14mers:8165
        15mers:6357
        16mers:5426
        17mers:4711
  30
        18mers: 4327
        19mers:4105
        20mers:4006
        21mers:3949
        22mers:3895
  35
        23mers:3800
        24mers:3721
        25mers:3650
        26mers:3611
        27mers:3627
  40
        28mers:3613
        29mers:3613
        30mers:3605
        31mers:3596
        32mers:3619
  45
        33mers:3656
        34mers:3673
        35mers:3700
        36mers:3714
```

```
37mers:3768
        38mers:3822
        39mers:3838
        40mers:3845
   5
        41mers:3856
        42mers:3920
        43mers:3982
        44mers:4015
        45mers:4080
  10
        46mers:4132
        47mers:4109
        48mers:4126
00 115
00 20
01 01 05 05
        49mers:4098
        50mers:4084
        51mers:4096
        52mers:4131
        53mers:4180
        54mers:4257
        55mers:4320
        56mers:4384
        57mers:4486
        58mers:4532
        59mers: 4565
        60mers:4567
        61mers:4624
        62mers:4729
        63mers:4873
        64mers:4994
        65mers:5081
 30
        66mers:5141
        67mers:5169
        68mers:5191
        69mers:5220
        70mers:5299
 35
        71mers:5427
        72mers:5558
        73mers:5648
        74mers:5674
        75mers:5691
 40
        76mers:5716
        77mers:5777
        78mers:5833
        79mers:5865
        80mers:5893
 45
        81mers:5968
        82mers:6075
        83mers:6198
        84mers:6331
```

```
85mers: 6394
        86mers:6470
        87mers:6535
        88mers:6606
   5
        89mers:6668
        90mers:6721
        91mers:6778
        92mers:6842
        93mers:6891
  10
        94mers:6895
        95mers:6881
        96mers:6901
        97mers:6920
15
15
120
        98mers:6925
        99mers:6908
        100mers:6883
        101mers:4871
        102mers:4792
        103mers:4761
        104mers: 4729
        105mers:4714
≘
106mers:4751
<u>l</u>
        107mers:4810
108mers:4879
T125
       109mers:4878
C
       110mers:4811
111mers:4738
       112mers:4684
       113mers:4614
 30
       114mers:4555
       115mers:4502
       116mers:4475
       117mers:4448
       118mers:4402
 35
       119mers:4399
       120mers:4435
       121mers:4439
       122mers:4449
       123mers:4453
 40
       124mers:4419
       125mers:4380
       126mers: 4363
       127mers:4304
       128mers: 4243
 45
       129mers:4166
       130mers:4087
       131mers:4068
       132mers:4041
```

A 120 - CA1 - 206444.1

```
133mers:4003
       134mers:3959
       135mers:3906
       136mers:3859
  5
       137mers:3802
       138mers:3743
       139mers:3713
       140mers:3616
       141mers:3577
 10
       142mers:3589
       143mers:3572
       144mers:3618
145mers:3668
Ū
⊈15
       146mers:3697
       147mers:3670
148mers:3639
       149mers:3580
       150mers:3503
151mers:3431
20
       152mers:3384
       153mers:3359
154mers:3330
<u>ļ</u>
       155mers:3321
C)
       156mers:3288
25
       157mers:3313
158mers:3325
159mers:3313
       160mers:3273
       161mers:3251
 30
       162mers:3212
       163mers:3196
       164mers:3185
       165mers:3179
       166mers:3182
 35
       167mers:3129
       168mers:3091
       169mers:3048
       170mers:3080
       171mers:3069
 40
       172mers:3061
       173mers:3036
       174mers:3012
       175mers:2970
       176mers:2911
45
       177mers:2912
       178mers:2891
       179mers:2925
       180mers:2945
```

A 121 - CAI - 206444.1

```
181mers:2992
        182mers:3019
        183mers:3002
        184mers:2973
   5
        185mers:2965
        186mers:2973
        187mers:2981
        188mers:2955
        189mers:2899
        190mers:2836
  10
        191mers:2756
        192mers:2707
        193mers:2673
DS4.~SELE . GIGET
        194mers:2646
  15
        195mers:2628
        196mers:2618
        197mers:2591
        198mers:2580
        199mers:2596
  20
        200mers:2623
        201mers:2623
        202mers:2595
        203mers:2583
        204mers:2529
  25
        205mers:2505
        206mers:2524
        207mers:2527
        208mers:2555
        209mers:2523
  30
        210mers:2487
        211mers:2431
        212mers:2364
        213mers:2307
        214mers:2263
  35
        215mers:2227
        216mers:2168
        217mers:2123
        218mers:2077
        219mers:2065
  40
        220mers:2035
        221mers:2020
        222mers:2034
        223mers:2038
        224mers:2026
  45
        225mers:2000
        226mers:1975
        227mers:1943
        228mers:1879
```

```
229mers:1808
         230mers:1771
         231mers:1720
         232mers:1687
   5
         233mers:1620
         234mers:1548
         235mers:1492
         236mers:1453
         237mers:1405
  10
         238mers:1381
         239mers:1338
         240mers:1272
15 15 mg mg mg mg 20
         241mers:1222
         242mers:1190
         243mers:1171
         244mers:1129
         245mers:1104
         246mers:1095
         247mers:1066
         248mers:1021
         249mers:996
_
[]
|-
         250mers:939
         251mers:896
C)
(T) 25
(C)
         252mers:850
         253mers:795
         254mers:742
         255mers:679
         256mers:649
         257mers:631
  30
         258mers:613
         259mers:602
         260mers:605
         261mers:600
         262mers:585
  35
         263mers:568
         264mers:540
         265mers:509
         266mers:487
         267mers:472
  40
         268mers:451
         269mers:418
         270mers:395
         271mers:365
         272mers:337
  45
         273mers:319
         274mers:285
         275mers:266
         276mers:246
```

```
277mers:223
       278mers:203
       279mers:194
       280mers:183
  5
       281mers:173
       282mers:173
       283mers:161
       284mers:145
       285mers:136
 10
       286mers:135
       287mers:130
       288mers:123
       289mers:121
C
       290mers:105
#15
       291mers:91
       292mers:84
L)
       293mers:66
۵ì
       294mers:53
C
       295mers:41
© 20
       296mers:31
       297mers:26
       298mers:21
₽ŀ
       299mers:16
300mers:10
1125
       GTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCTG
GGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAAC
GAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGGC
       CTCCAGCTGACTCATGAGAGAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATGT
       CTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTAA
 30
         True solution
                        DotsOn=285
       GTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCTG
       GGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAAC
       GAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGGC
 35
       CTCCAGCTGACTCATGAGAGAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATGT
      CTTCCCGAAAGCTATCGGGTAGAATATCAGATTCCCATGT
         DotsOn=283
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40
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      CGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGG
      CCTCCAGCTGACTCATGAGAGAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATG
      TCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTT
        DotsOn=285
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GTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCTGGGTGCTACTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAACGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGGC

45

30

35

CTCCAGCTGACTCATGAGAGAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATGT CTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTTG DotsOn=285

- 5 GGTAGGGGTAGACATCGCGTAAAAGGGGCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCT
  GGGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAA
  CGAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGG
  CCTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATG
  TCTTCCCGAAAGCTATCGGGTAGAATATCAGATTCCCATG
- 10 DotsOn=284

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DotsOn=284

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DotsOn=284

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DotsOn=285

- 40 GTAGGGGTAGACATCGCGTAAAAGGGGCCGTACCCAGGACCCCCCTTGGCTCAATAAGTAGCGCTG
  GGGTGCTACTACGGGTCTCGACACGCATTCAACTAAAAGCTTCCATTCGCACGGGCTTATTTAAC
  GAAGGTCGCGATAAGGTGCCGAATAGGCTGCAGAGCGGCAGCCTGTCCAGTGAATGCTGTGAGGC
  CTCCAGCTGACTCATGAGAGAAGCCCAGTATTCAAACTACGATTCCACTCGACAATTTAGGATGT
  CTTCCCGAAAGCTATCGGGTAGAATATCAGATTCGTTTGA
- 45 DotsOn=284

Solutions: 10